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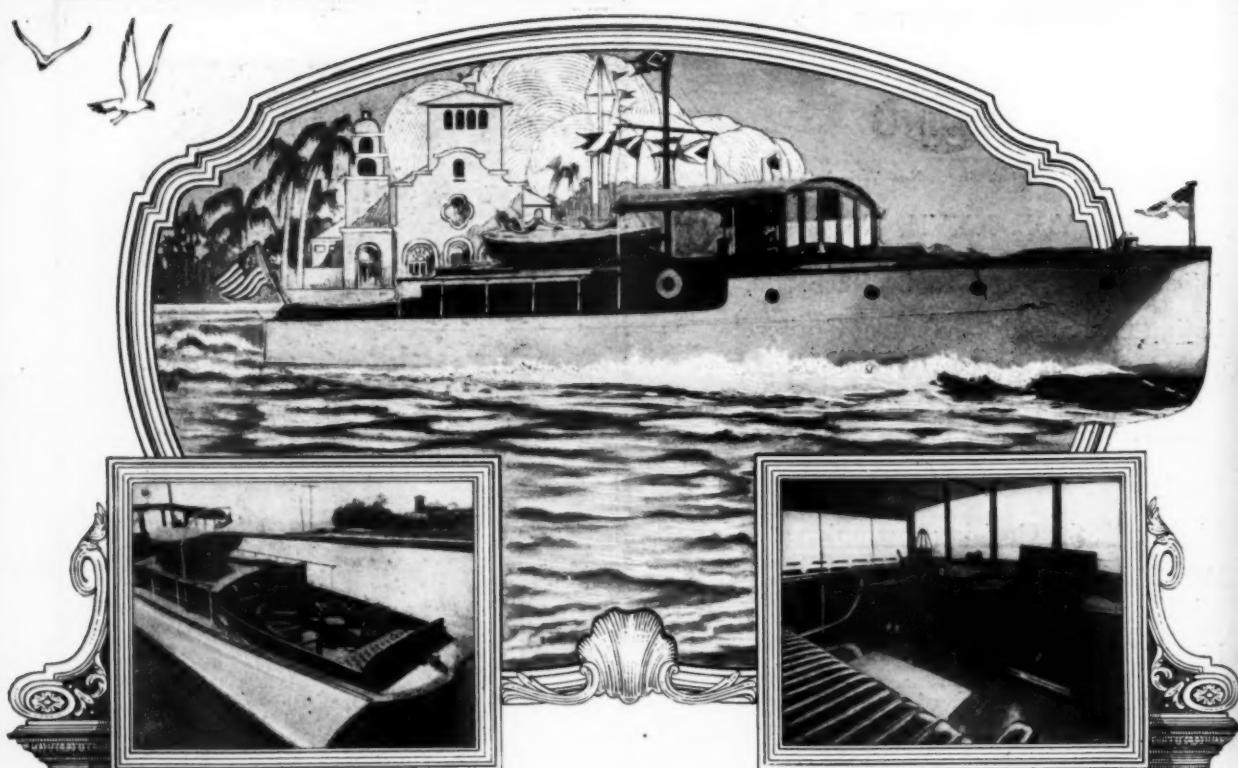
## TROPHIES

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# MOOR BOATING

Photograph by International

119 West 40th St., New York



Near the finish of the first 50 mile heat Adieu leading, followed by Rainbow and Orlo II. Wharf of the Flamingo Hotel in the foreground

## Adieu Wins Fisher Trophy Race

The Greatest Series of Motor Boat Races Ever Held—All Boats of Practically the Same Speed—Marine Motors Stand Up for the 150 Mile Grind Without Failure

By Charles F. Chapman

See Summary of Results page 64

THE Carl G. Fisher Trophy, representing the American Power-Boat Association Displacement Boat Championship, comes to America for the first time. Rainbow, owned by Commodore Harry B. Greening of the Royal Hamilton Yacht Club, which so gallantly won the trophy at Detroit last summer, defended it at Miami February 10, 11 and 12 with all the energy of her popular owner and the might of her faithful power plant, but had to give way to the younger and newer boat Adieu, owned by Webb Jay of Chicago and Miami.

It was a great race won on its merits. A blanket would have covered the three contestants during most of the three heats of 50 miles each. When the gun announced the end of the 150 miles, Rainbow's bow all but lapped Adieu's transom. The records show she was 3 seconds behind.

THE world may have grown accustomed to great things done in Miami. In the whole history of that city wonderful growths and achievements seem to be a basic principle. Only 100 people in 1896 and a mark of 100,000 for 1925 is but one of these. Carl G. Fisher is responsible for much in Miami's history. Not the least important are the motor boat races held at Miami every winter. To the average spectator who saw the boats last month make 75 laps around the best two mile course in the world, competing for the Fisher Trophy, the sight may not have been particularly inspiring but to motor boatmen, to the racing enthusiasts and to the whole field of motor boating, whether it be one who derives pleasure from boating or his livelihood from the industry, the events were of the greatest importance. Not only were world's records shattered in every race and in every class but the type of boats breaking them were of the highest order. Freaks did not compete. Marine motors stood up under the most rigid tests with hardly a failure even of a minor accessory. Owners drove their own boats in the races, all were real sportsmen. The development of boats and power plants was the sole object sought. In many of the events no prizes or trophies were offered or given. Better boats and better engines will be the result. The whole world will be benefited. Those motor boatmen and those of the industry who were fortunate enough to be present saw a great race with clean and close competition. The value of the data obtained is inestimable.

—EDITOR.

Adieu deserved the victory, but Rainbow was not disgraced. It was a race where all three boats were of exactly the same speed on the 2-mile course, and all had equally reliable power plants. It was the racing experience and racing judgment of the drivers which swung the result. In this, Webb Jay, driver and owner of Adieu, excelled by a slight margin, but it won him the series. Both Commodore Greening who drove Rainbow, and Albert Hickman who was at the wheel of Orlo II, made errors in judgment and exhibited at times lack of knowledge of certain features or characteristics of their craft. It even approached timidity at times, but was probably

due to a desire to save their boats in the belief that endurance was of greater moment than extreme speed.

The race showed many things. In power plants, the

championship honor now goes to a Hall-Scott motor. The six-cylinder Hall-Scott stock marine motor in Adieu ran for the 150 miles without a falter. Twice it had to be stopped in the second heat to change a spark plug, but only for a few moments on each occasion. Other than this minor trouble, none of the motors showed up a single fault. Although the Sterlings in Rainbow and Orlo II did not drive their boats to victory yet they are deserving of every bit of praise that we can give them. They came through the series in which no repairs or adjustments are allowed between heats with a 100 per cent record. They only lost by seconds and then after Rainbow had hit a log in the second heat and bent a propeller blade so that she could not run at maximum speed, and Orlo II's exhaust pipe had pulled out of the exhaust manifold on the way to the starting line on the third day, which prevented her from making a start.

Perhaps the most striking and interesting feature of the race meet was the entry of the Sea Sled, Orlo II, owned by George Leary, Jr., of New York. This type of boat up to this time has been an unknown quantity in motor boat racing events. She started the series far from a favorite. Prejudice made her an also ran before the starting gun. But at the end her stock had gone up above par. Not only did she win the second heat of 50 miles, but she made the best time for 50 miles and for one lap of two miles with sharp turns. In the mile trials she set the world aghast by showing a speed of 47.0 miles per hour as her average for 6 one-mile dashes. So the record for runabouts powered with marine engines for one mile, two miles and fifty miles is now held by a Sea Sled. Her one-mile record is only slightly below that of Miss Nassau, the holder of the one-mile record for runabouts powered with aviation motors, undoubtedly the fastest runabout in the world. But Miss Nassau is only a light 28-footer powered with more power than is installed in the Sea Sled, Orlo II. This boat is a big, husky 36-footer with a seven or eight foot beam, weighing about 11,000 pounds. It is doubtful whether Miss

## NEW WORLD'S RECORD MADE AT MIAMI

### Runabouts Powered with Marine Engines

Distance	New Records			Old Records		
	Boat	Motor	Speed	Boat	Motor	Speed
One Mile.....	Orlo II	2 Sterlings	47.0 <sup>1</sup>	Rainbow	Sterling	38.9 <sup>1</sup>
Two Miles.....	Orlo II	2 Sterlings	40.8 <sup>2</sup>	Falcon	2 Hall-Scotts	38.3 <sup>2</sup>
Fifty Miles.....	Orlo II	2 Sterlings	38.8 <sup>3</sup>	Rainbow	Sterling	37.2 <sup>3</sup>
150 Miles.....	Adieu	Hall-Scott	37.5 <sup>3</sup>	Rainbow	Sterling	36.1 <sup>3</sup>

Express Cruisers						
One Mile.....	Gar Jr. II	2 Smiths	41.8 <sup>1</sup>	Gar Jr.	Smith	36.6 <sup>1</sup>
Two Miles.....	Gar Jr. II	2 Smiths	32.4 <sup>2</sup>	Gar Jr.	Smith	34.45 <sup>2</sup>
Ten Miles.....	Gar Jr. II	2 Smiths	32.2 <sup>2</sup>	Hoosier V	2 Sterlings	31.36 <sup>2</sup>
Miami to Palm Beach and return 129 miles.....	Gar Jr. II	2 Smiths	32.8	Altonia	2 Speedways	28.0
Miami to Key West 156 miles.....	Gar Jr. II	2 Smiths	31.2	Hoosier V	2 Sterlings	29.9

<sup>1</sup> Average of 6 One-Mile dashes.

<sup>2</sup> Circular course 2 miles to the lap.

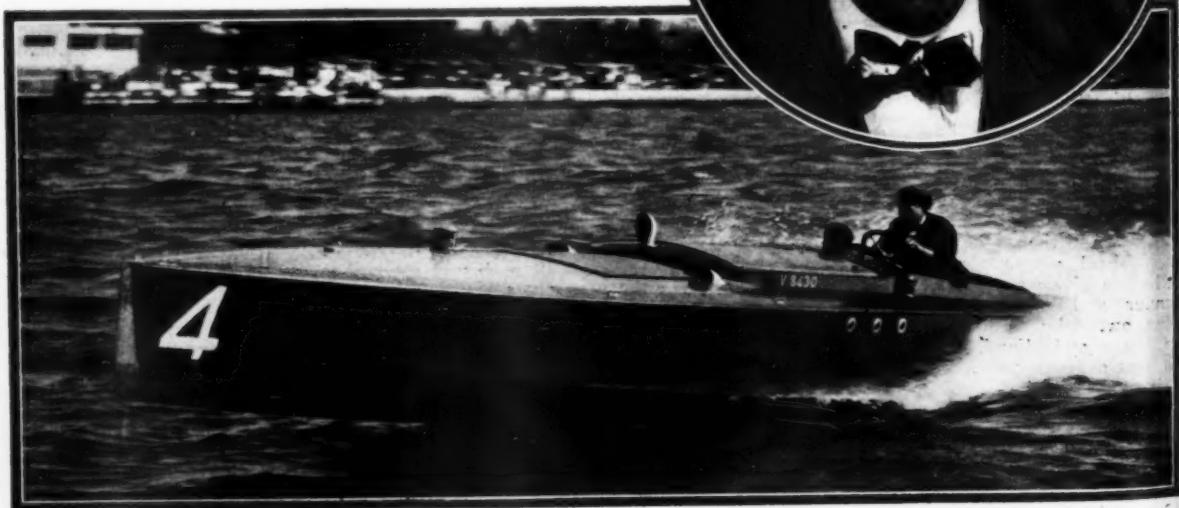
<sup>3</sup> Circular course 2½ miles to the lap.

Nassau weighs more than one-third of this amount. Therefore it seems that the efficiency of the Sea Sled model with surface propulsion has been clearly demonstrated and most convincingly proven.

Adieu, the winner, is a Hacker designed and Hacker built craft. She was built especially for the race and complies in every way with the requirements of the Deed of Gift planned to de-

velop a sensible runabout. Adieu has a length of just over 32 feet and is powered with a 6-cylinder 200-h.p. Hall-Scott marine motor. Mr. Hacker in designing Adieu has evolved a new idea to reduce the wetted surface while the boat is running, which results in more speed with a given amount of power. The keel line of Adieu has been given a "rocker," that is, it curves upward toward the bow. When the boat runs and begins to plane, the whole boat rises in the water and her bow comes out for nearly half the boat's length without the boat's trim being changed to any great extent. In other words, Adieu rides entirely on her after sections. There is no squatting of the stern, but the wetted surface is greatly reduced, as nearly half of the

Photographs by  
M. Rosenfeld

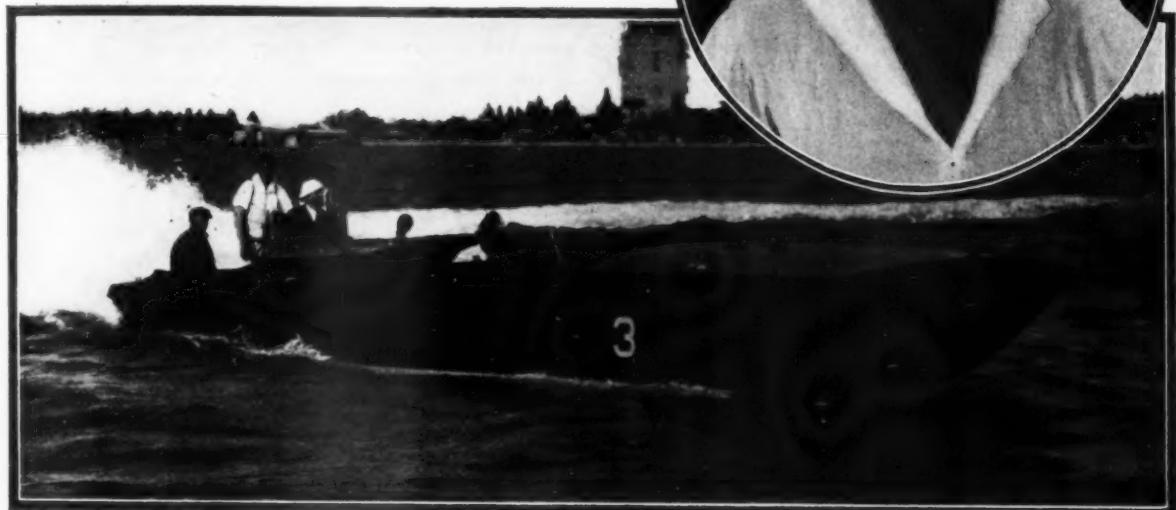


Adieu the winner of the Fisher Trophy race. She is owned by Webb Jay (shown in the insert) and is Hacker designed and built. Her power is a 6-cylinder Hall-Scott

Photographs by M. Rosenfeld

boat's underbody, which is under water when she is at rest, is clear of the water when she is underway. As wetted surface is one of the principal causes of resistance, one will see how well Mr. Hacker has worked out a design so that all the power will be used to drive the boat forward, while formerly much had to be expended to overcome wetted surface resistance.

Adieu's turning qualities were wonderful. She was able to get around even the sharpest turns without any loss of speed. Seldom did her motors have to be throttled down at the turns. Many of those present at the race thought Adieu might not have the sea-going qualities to permit her to win on the third day when the course was laid out in the ocean, but they were all mistaken in this, as Adieu



George Leary, Jr., and his Sea Sled Orlo II. This boat did not win the trophy but set up new world's records for one, two and fifty miles. Her power is two Sterlings

proved herself to be a magnificent sea boat. Not only was this Adieu's first race but she had hardly had a trial run before the race. Mr. Hacker certainly turned out a wonderful boat. She carried the least amount of power of any boat in the race.

Rainbow is the same craft which won the Fisher Trophy at Detroit last summer in three straight heats. But her owner had not been idle since the last races, as he realized that competition at Miami would be keen. Therefore, he had made several changes and refinements in the hull and power plant which gave Rainbow a speed of 3 miles an



Rainbow which won the trophy at Detroit last summer but lost it at the recent races by seconds. The insert shows her owner Commodore Harry B. Greening of Hamilton, Ont., in a familiar pose

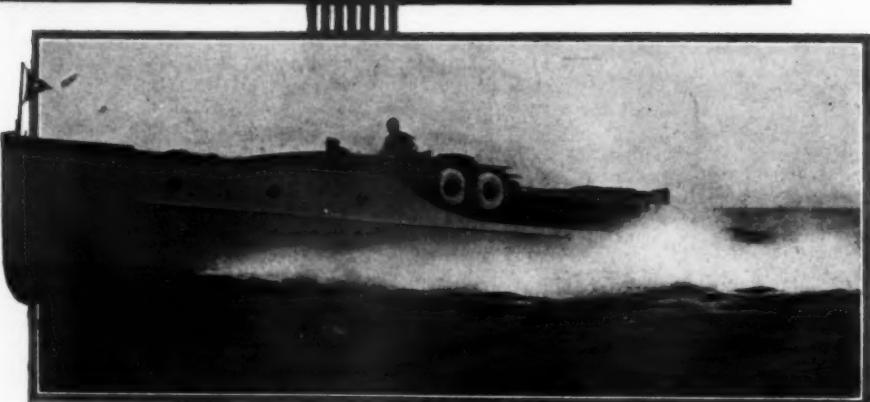
Photographs by M. Rosenfeld



*Gar Jr. II, winner of the speed cruiser championships. She is owned by Commodore G. A. Wood of Detroit Miami to Palm Beach and return: 129 miles, time 3 hours, 55 minutes, 51 seconds. Miami to Key West 157 miles, 4 hours, 52 minutes*

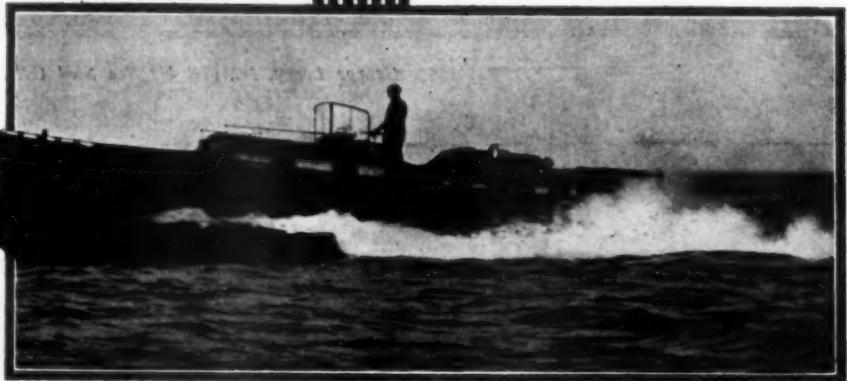
*Cigarette owned by Gordon Hammersly of New York*

*Time Miami to Palm Beach and return: 4 hours, 40 minutes, 12 seconds*



*Shadow V, Carl G. Fisher's express cruiser*

*Time Miami to Palm Beach and return: 5 hours, 6 minutes, 34 seconds*



hour more than she had at Detroit. Her speed was increased from 38.9 miles per hour to 41.8. This was certainly a real accomplishment, as it was believed her maximum had been reached last summer.

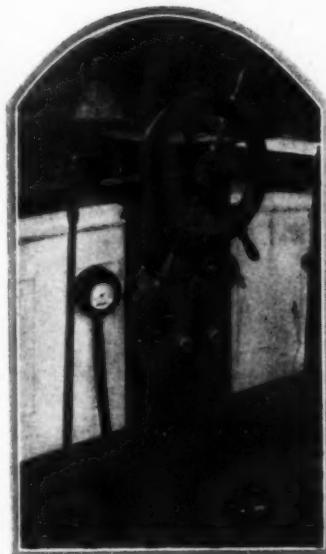
Miss Miami, owned by Carl G. Fisher, was entered but did not start. This boat is a 37-footer designed and built by the Purdy Boat Company of Trenton, Mich. For days before the races she was out on the course running 50 to 75 miles a day to get the 450 h.p. Allison motor limbered up. She was running lap after lap at about 3 minutes flat, which is exactly the same speed made by the other three contestants in their best laps. Miss Miami was out at 6 o'clock on the morning of the first heat for her final adjustments and after running 20 miles one of her connecting-rod bearings burned out, which put her completely out of the race. This was unfortunate as it took away some of the expected competition. There were many who believed that Miss Miami was faster than the other boats, but this question still remains unsettled. However, she is now on her way back to Trenton, Mich., where the motor will be taken out and shipped back to the Allison Experimental Works at Indianapolis to be made ready for the next series, which will take place at Buffalo late next August. Mr. Fisher says he will win at Buffalo.

The story of Orlo II is interesting. Her owner, George Leary, Jr., of New York, became enthused at the New York Motor Boat Show in December over the prospects of winning the Fisher Trophy. After looking over everything at the Motor Boat Show, he decided that a Sea Sled was the best bet to win. Then began the negotiations with Mr. Hickman. Could he build a new boat in the six weeks that remained before the race? He said yes. Could she be gotten to Florida in time? Mr. Leary said yes to this question. Would Mr. Hickman guarantee a speed faster than any runabout had ever run to date? He knew the possibilities in the Sea Sled models, so after he had looked up the existing runabout records, he told Mr. Leary that he would build him a Sea Sled which would go faster than any runabout yet built. But Mr. Leary wanted to know how much faster. All these negotiations were taking time and the date for the race was hardly five weeks off. Finally a speed of 45 miles an hour was decided upon and the contract signed about the 21st of December. Mr. Hickman completed the design on Christmas Eve and on December 26 work started. The contract called for trials on January 26.

Two Sterling 6-cylinder Type GR motors were ordered  
(Continued on page 84)

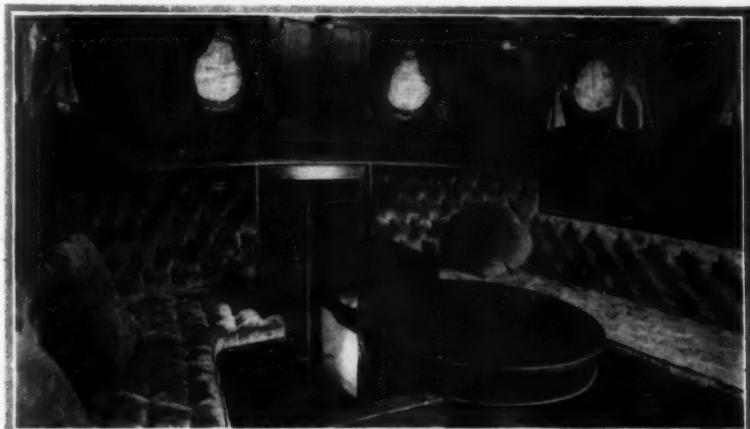
# Ensign II, a Speedy V-Bottom Cruiser

An Unusual Boat Having a Certain Military Appearance, in Which Are Combined Many Ideas for Comfort and Fast Cruising Speed



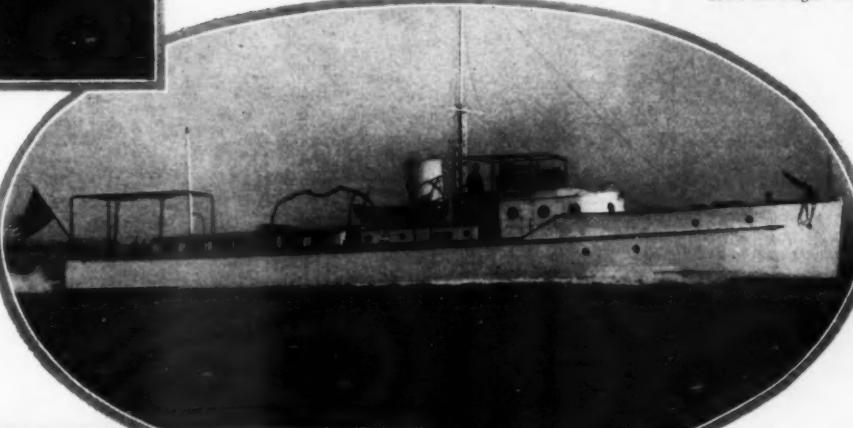
Photographs  
by E. Levick

All controls are centered on the bridge aft of the deck-house. Switches and clutch controls for the engines are within easy reach



An interior view of the deck-house looking forward showing the comfortable furnishings and ample quarters available. The forward cabin has berths for two and can be seen through the companionway

Ensign II  
built for L.  
L. Driggs of  
New York  
City by  
George Law-  
ley & Son  
Corporation  
from designs  
by William  
H. Hand, Jr.  
is an 85-foot  
x 14-foot 3-  
inch V-bot-  
tom cruiser



Ensign II is provided with a large forecastle for the crew, a forward cabin, dining saloon, a large galley the full width of the boat, an engine room, a radio room with berths, bath rooms, owner's staterooms and exceptional accommodations throughout. Her lines are excellent which is shown by the sustained high cruising speed of which she is capable



The power plant consists of two six-cylinder model G.R. Sterling motors which provide a cruising speed of 20 m.p.h. The motors develop about 180 h.p. each at this speed and the engine room is unusually quiet. Electric auxiliary equipment is carried

# They Proved by Their Progress in 1920 That There Will be Great Developments This Season



Alfred E. Luders of the Luders Marine Construction Co., whose successful boats of last season ranged from his own prize-winning boat, *Sentinel*, a little 36-footer, to the successful 50-footer express cruiser having a speed of better than 33 miles an hour which he designed and his company built



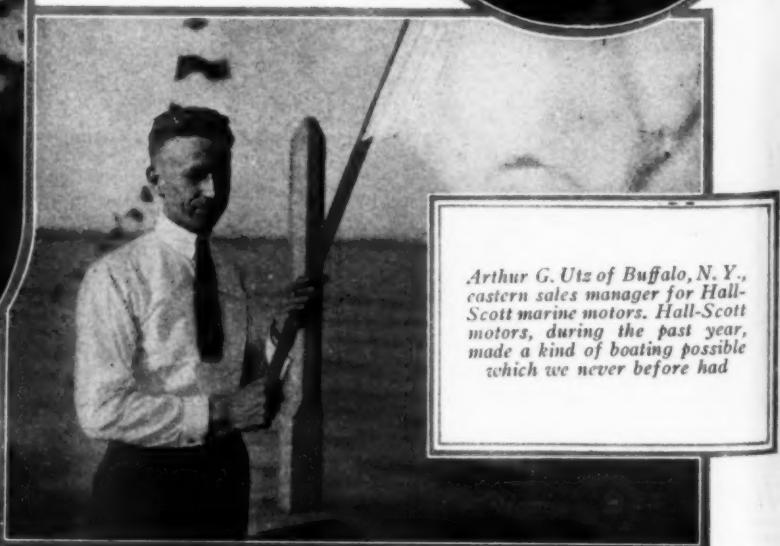
W. C. Morehead, president of the Great Lakes Boat Building Corp. of Milwaukee and Guy W. Vaughan, vice-president and general manager of the Van Blerck Motor Co. of Monroe, Mich. Messrs. Morehead and Vaughan are known as The Twins of the Marine Industry. *Frances*, the 104-foot express cruiser built by Mr. Morehead's company in 1920, is the fastest motor cruiser of her size ever built. Van Blerck motors were used to power many of the best boats last season

Photographs by M. Rosenfeld

Charles A. Criqui, president of the Sterling Engine Co. of Buffalo. Mr. Criqui's contribution to the past year's progress has been the type G Sterling motors. This model represents the very best and most highly developed practice in internal combustion engine design and construction



Clement G. Amory, treasurer of the Consolidated Shipbuilding Corp. of New York. Mr. Amory's company not only has built the greatest number of yachts during the past year, but *Lyndonia*, the 230-footer, was the largest



Arthur G. Utz of Buffalo, N. Y., eastern sales manager for Hall-Scott marine motors. Hall-Scott motors, during the past year, made a kind of boating possible which we never before had

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Boat  
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Prof. George F. Crouch, designer of the champion Rainbow and who has just completed several more designs for 1921 runabouts which are going to do better than Rainbow



E. T. Larkin, chief engineer of the Sterling Engine Co., the man responsible for the design of the new GR Sterling motors, the latest in marine engines and John L. Hacker, who has designed and built many fast runabouts during the past twelve months



L. L. Tripp, president of the Albany Boat Corp. Mr. Tripp's real achievement has been the Tarpon design which is an absolutely new principal in runabout design



Chris Smith of Algonac, Mich. Mr. Smith designed and built the world champion Miss America. The Smith boats and hydro-planes are now to be built in quantity and sold as stock boats



Henry R. Sutphen, president of the Elco Co. of Bayonne, N. J. and president of the National Association of Engine and Boat Manufacturers. Mr. Sutphen believes in the standardized boat and to show his faith in them, he plans to build several hundred stock cruisers during 1921

# Single Handing It

The Incomparable Sport of Cruising Without Companions And Fighting Old Father Neptune In His Various Moods and Tantrums

By Alfred F. Loomis

THE genial editor of MoToR BoatinG was kind enough to publish in the December number a letter to motor boatmen in which I gave courtesy the "deep-six" and characterized some of his readers as buoy-huggers. If the murmur of agreement that arose from others of his readers following the appearance of the letter may be taken as a criterion I happened to voice a sentiment that is rather generally felt. One lonely soul from Perth Amboy wrote that he despaired of ever getting a crowd together for a cruise, and so weighed anchor by himself and periodically stole off for the pleasure and amusement that he could find in a single-handed cruise.

Probably his is a situation which the most ardent motor boatmen of every rendezvous in the country have to face, for there are so many conflicting sports nowadays that it is difficult to get together over one keel a group of men who want to cruise to the same objective at the same time. This man can stay away from business two days at a time; the man on his right with the woe-begone expression is recently married and doesn't like to leave his better half long enough to let her realize how happy she is when alone; the stoop-shouldered, professorial gentleman in the background has something in an earthenware crock that has to be bottled Saturday night come what may—and so on. The psychological time, place, and *dramatis personae* just naturally don't seem to get together.

What is the objection, then, to every ambitious boat owner's setting off on a single-handed cruise whenever the spirit moves him? None whatever, if he happens to know what fun it is to cruise alone.

For myself, I have long felt that the rôle of Lone Wolf is a mighty satisfactory part to play in a summer's outing. I appreciate companionship the more when I have been for a stretch without it. Cruising alone week after week in strange waters, the thought has never crossed my mind that lack of a companion to bear a hand in an emergency has jeopardized my safety; but as loneliness rather than the danger factor is the objection most frequently raised against solitary wayfaring, I ought to point out first why loneliness is impossible.

In the first place,

anyone who has cruised at all knows that the sea is an exceedingly captious and exacting mistress. From every vessel afloat, large or small, she demands the undivided attention of the humanity aboard that vessel. On a large ship there must be deck officers, quartermasters, lookouts, lifeboat and lifebuoy watches, radio operators, and engineers on the quivive to obey her whims and circumvent her desires; and on the smallest motor boat there must be at least one man in full possession of his faculties to pay her court. Captain Slocum and others who have sailed alone around the world were favorites of a fickle queen, who, in her more amiable moments permitted them to lash the wheel and obtain the sleep necessary for her next tantrum.

But the man who single-hands it in a motor boat can't take his "caulkin's"—his motor would prevent that even were it possible to lash the wheel and steer a steady course—and he has a sufficiency of cares with which to occupy his waking hours. On a calm day he must be alert to avoid weeds and driftwood, to keep an eye open to windward, and to employ his sixth sense in forecasting the weather possibilities. When the wind blows up—as it always does—he must do these things and pay heed to entering the larger waves at the proper angle to their scend. He must also keep his course, study the charts and from them recognize landmarks as he sights them; watch the surface of the water and observe the effect of wind, wave, and tide on it for evidence of submerged dangers; and he must keep his subconscious ear open to the motor, ready to note at once any irregularity in its functioning and any difference in its tune. Moreover, he must screw down grease cups occasionally, oil the motor from time to time, and be constantly certain

that every part of his equipment from tiller line to running lights is at concert pitch. And in his idle moments he may have to pump bilge.

No, the Lone Wolf has no time for loneliness. He does the work which could easily occupy the time of two or three men cruising together—and he calls it play. He enjoys it because 'longshore cruising, or piloting as it is more technically termed, is the most fascinating pursuit in which the amateur



What with laying courses, steering, pumping bilge, and keeping an ear open for the motors, the single handed has no time for loneliness. The photographer was imported for the occasion



Gilkey Harbor Light Penobscot Bay, Maine, a familiar landmark for the yachtsmen of the Islesboro vicinity



Camden Harbor, Penobscot Bay, Maine, in the shadow of Mounts Megunticook and Beattie is one of the most charming havens on the New England coast

boatman may indulge, and because, being alone, he must exert his faculties to the utmost to adapt himself and his craft to the exigencies that arise.

Almost any man who has cruised alone extensively will tell you that he has never been lost. He may be departing from the truth in the strictest sense of the word, but he means that never for a moment has he been more than two miles off reckoning in open water nor more than five hundred yards from his supposed position in piloting. Can this be true. If the automobilist, touring roads well marked with sign-boards, sometimes takes a wrong turning, how is it possible that the boatman cruising in strange waters can keep track of his position! Perhaps because his life may depend upon it, but chiefly because by being alone he is able to keep his mind in a plastic state, ready always to yield to new impressions and beliefs. There is no one to persuade him against his will that what is, isn't.

The solitary yachtsman takes pains to identify every light, buoy, and beacon that comes within his range of vision. He won't say to himself as he probably would to a companion, "I guess that buoy marks the shoal off such-and-such island; it makes no difference anyway, as it's off the course." He verifies the identity of the buoy, by fixing its location on the chart, by comparing its position with known landmarks, or in extreme cases, by going out of his way to read its name and number. In addition, if he is at all uncertain of his whereabouts he refers to the chart each prominent object ashore, and feels the thrill of the discoverer every time he can say "check" of his dead reckoning.

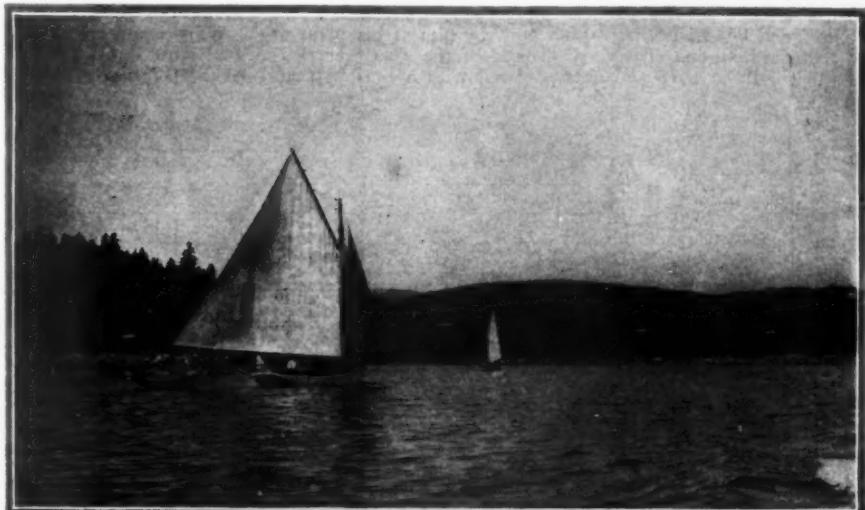
This nongregarious Corinthian knows the delights of an untrammeled mind. Suppose he does get off his course and finds that surrounding objects have a strange appearance. He has no companion who may say, "Well, that's Grassy Island, right enough, because you can see that it's covered with grass. That puts us right here on the chart, and if we keep on we'll pick up Thrumbcap in fifteen minutes." Such a statement from a shipmate is bound to influence him one way or the other. Either the man responsible will form a snap judgment that the island

is Grassy, or by natural contrariness he'll decide that it isn't; and his decision made, he is definitely committed to action.

Being alone, he follows out the following extremely logical line of thought, and you will agree that not for an instant does he lose track of his position. He thinks to himself or speaks aloud to the nearest seagull: "That looks like Grassy Island, right enough, but there are three other islands in the vicinity all grass-covered, so I'm probably wrong and shall proceed carefully. . . Ah! I was right. The Coast Pilot says that Grassy Island has a shanty on its northern end, and this island has no shanty. So it must be Raspberry Island. . . But Raspberry is supposed to lie due east of a low island having a clump of bushes on its western side, and there are no bushes on the other island; so the pair must be Lamb and Ewe Islands which are low, flat, and grassy. If that's so, in another minute I should pick up the buoy marking the entrance to Harcott Narrows. . . No, there isn't any buoy. I was wrong. . . Yes, there's the buoy, sucked half under by the tide. I was right all the time." And because he continually balanced doubt against certainty and kept his mind open to the reception of new impressions from the changing panorama, he was right all the time.

Last summer in cruising down the coast of Maine I ran into the old shipbuilding town of Millbridge, and from there doubled back and passed through Dyer Island Narrows into Pleasant Bay. The channel through the narrows is crooked and is flanked by rocky shoals; but it is marked by four spar buoys within the space of a mile, and I anticipated no difficulty in keeping to deep water. Picking up the first buoy with ease, I squared off gayly in the direction of the second, churning the water behind me at a 14-knot pace. But I soon saw that there was no second buoy, and in another moment I was running between ledges that had an alien, not to say menacing, appearance. I put about, ran back to the buoy and there lay to study the surrounding islands. When running in waters plentifully supplied with

(Continued on page 94)



Entrance to Northeast Harbor, Mt. Desert Island, Maine, where the finest boats of the region have their rendezvous

# Victory II, The Cruising Champion

A Regular Cruising Boat That Goes Racing, the Undefeated Victor In All Long Distance Cruiser Races In Which She Has Competed Since 1916

By H. A. Jackson

Photographs by M. Rosenfeld

Drawings by F. W. Horenburger



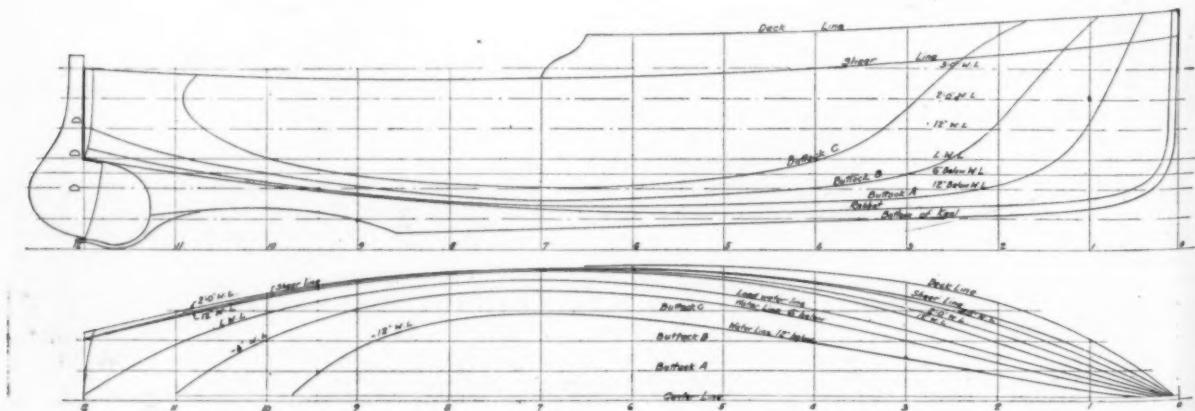
*Victory II, the cruiser which now bears the title of "Handicap Cruiser Champion of America"*

**V**ICTORY II, because of her record of having raced in the cruiser classes of New York and Long Island Sound since 1916 without defeat, is considered by many to be a regular racing boat. Nothing could be more in error. She is a regular boat that goes racing. Designed, constructed, equipped, furnished and powered without regard to any rules of measurement—indeed, she was built before the present American Power-Boat Association rules were formulated—she is every inch a cruiser and to my mind the ideal one of her size.

It will perhaps be interesting to go into her history and that of her sister ships, for she is one of a class of five designed by A. E. Luders and built by him at his plant at Stamford, Conn. The original boat of the class was Sentinel, built in 1911 and now powered with a Scripps two-

cylinder motor. Then followed Wild Duck and Turtle in 1919 with a four-cylinder  $4\frac{1}{2} \times 5\frac{1}{2}$  Sterling and four-cylinder  $5\frac{1}{2} \times 6$  Van Blerck, respectively. Victory II (original Oriana) was built in 1914, and her original engine, a two-cylinder Sterling Fisherman, was changed in 1916 to a four-cylinder of same make in size  $4\frac{1}{2} \times 5\frac{1}{2}$ , same as Wild Duck. The power plants of these four have all been changed from their original motors and are at present as stated. The last of the five is Ensign II, launched in 1918 and still powered with her original two-cylinder Sterling Fisherman, which at this writing is steadily pushing her among the enchanted waters of Florida.

So it would seem that the usual cry of rule beater cannot apply to any of these boats, all built from the 1911 moulds of the original vessel, except Ensign II, which was broad-



*Victory II's lines as prepared from data obtained from the boat itself*



Looking forward in the cabin of Victory II. The large galley and refrigerator are in the background

ened out some six inches aft, which undoubtedly was an improvement. Curiously enough, up to 1920 only two of these had ever entered the racing game—Sentinel and Victory. In 1920 Commodore Farmer B. S.\* having purchased Turtle and joined his other two sister ships, but on account of his high power, while faster boat for boat, was not able to overcome the time allowance handicap of the existing boats.

Sentinel has always been Victory's closest competitor and it has been a hard task to allow her some twenty-five minutes in fifty miles which her smaller engine and lower rating entitled her to. Neither Wild Duck nor Ensign II have ever taken part in races (except possibly local ones, of which there is no record), and it would be interesting indeed to see these five compete in one class and particularly would I like to meet Wild Duck with the same power plant and installed at the same time (Summer of 1916).

These boats are all 36 feet over all, 35 feet 9 inches on waterline, 9 feet extreme beam and 8 feet waterline beam, 3 foot draft with an immersed amidship area, according to American Power-Boat Association measurement of roughly 9.75 square feet. Like all Luder's boats, they have a particularly fine entrance with good but not excessive flare forward and a clean run. Their lines are about as easy to drive as it is possible to design a boat, and it may be mentioned that their reasonable speed limit is some nine to ten miles per hour. After that limit is reached the power needed for more speed is excessive for the results obtained. It may sound strange for a loving owner to say

\*Bass Soloist

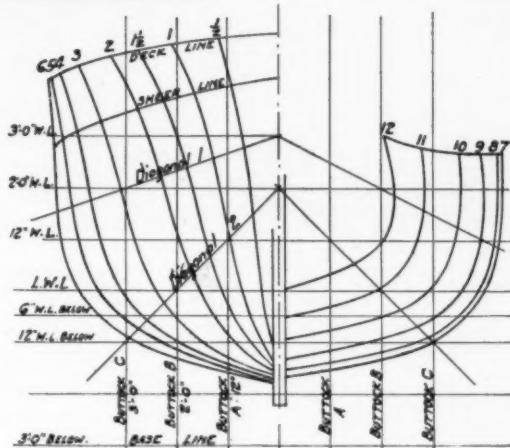
STATIONS	0	1/2	1	1 1/2	2	3	4	5	6	7	8	9	10	11	12
Deck line	7-1-5	7-10-0	7-8-6	7-7-4	7-6-3	7-4-1	7-2-6	7-1-5	7-1-3						
Sheer line	7-2-1	6-1-1	6-9-0	6-7-2	6-5-4	6-2-5	6-0-2	5-10-3	5-9-1	5-8-2	5-8-0	5-8-5	5-9-6	5-11-6	
Rabbet	2-0-6	1-8-4	1-6-6	1-5-6	1-4-6	1-3-2	1-2-5	1-1-3	1-0-2	1-4-2	1-6-4	1-9-2-2	1-0-0	2-6-0	3-0-0
Bottom of keel	1-8-2	1-4-2	1-2-6	1-1-6	1-0-6	1-1-2	1-0-10	1-0-9-3	1-0-3	1-0-3	1-0-2-0	1-1-6-1	1-4-0	1-2-4	
Deck line	1-2-1	2-1-2	2-9-2	3-3-3	3-1-0	4-3-3	4-5-4	4-5-6							
Sheer line	0-1-1	1-7-6	2-2-6	2-9-0	3-5-4	3-1-0	4-4-4	4-4-4	4-4-3	4-3-1	3-1-1	3-6-0	2-9-3	2-0-4	
HALF	0-2-5	1-4-3	1-11-2	2-6-9	3-4-4	3-10-7	4-2-5	4-4-5							
3'0" W.L.	0-6-6	1-1-7	1-8-1	2-2-6	3-1-0	3-8-3	4-1-0	4-4-1	4-4-2-3	4-3-1	3-11-7	3-6-4	2-10-1	2-2-0	
2'0" W.L.	0-5-3	0-11-3	1-5-1	1-11-2	2-9-5	3-5-6	3-10-4	3-0-0	4-3-4	4-2-2	3-11-1	3-5-1	2-8-2	2-0-2	
BREADTHS	1'2" W.L.	0-4-0	0-8-4	1-1-3	1-6-4	2-4-6	3-0-6	3-2-6	3-10-8	4-0-0	3-10-4	3-6-4	2-10-7	1-10-1	
	Load waterline	0-3-2	0-6-6	0-10-5	1-2-2	2-0-3	2-8-0	3-0-6	3-6-0	3-7-5	3-5-7	3-0-6	2-0-5	0-3-0	
	6'0" W.L. below	0-3-2	0-6-6	0-10-5	1-2-2	2-0-3	2-8-0	3-0-6	3-6-0	3-7-5	3-5-7	3-0-6	2-0-5	0-3-0	
	12'0" W.L. below	0-4-0	0-6-5	0-10-4	1-5-6	1-11-2	2-3-2	2-2-0							
BUTTOCKS	Buttock A	7-8-2	4-3-2	3-2-0	2-1-3	1-8-4	1-6-2	1-3-0	1-3-0	1-5-4	1-7-2	1-10-2	2-5-2	2-2-2	3-4-0
	Buttock B	7-7-0	5-1-4	4-2-0	2-5-2	2-0-2	1-10-0	1-8-2	1-7-6	1-9-5	2-0-7	2-5-6	3-0-6	3-1-2	
	Buttock C						7-0-0	5-7-2	2-10-2	2-5-2	2-1-0	2-0-1	2-1-5	2-5-4	3-1-2
DIAGONALS	Diagonal 1	0-8-4	1-4-1	1-10-6	2-5-1	3-3-0	3-1-0	4-3-0	4-6-5	4-9-2	4-8-1	4-4-5	3-12-6	3-1-6	2-6-2
	Diagonal 2	0-8-4	1-6-1	1-10-6	2-6-3	3-3-0	3-1-0	4-3-0	4-6-5	4-1-2	3-9-5	3-4-0	2-9-2	2-0-6	

All dimensions given in feet, inches and eighths  
All heights from Base Line. Base Line 3'0" below L.W.L.

Table of offsets from which the lines can be reconstructed

it, but Victory is not a fast boat, at least not fast for present-day standards. She was fast enough to beat all the cruisers in every race from 1916-1920, inclusive, and end up by winning the first race for the American Power-Boat Association Cruiser Championship of America against eighteen competitors, which included the champions of New York, Long Island and Philadelphia waters. I doubt if in still water she will reach ten honest miles per hour, and I know she won't exceed that, notwithstanding she has beaten boat for boat, many of the twelve to fifteen milers.

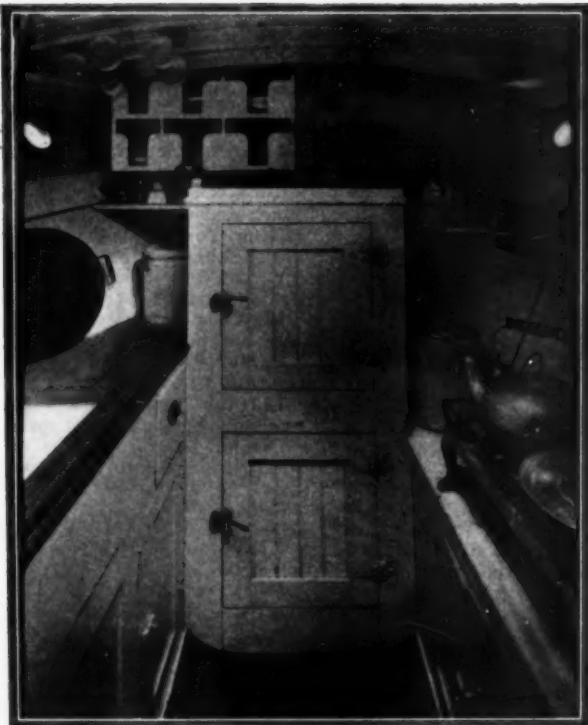
But this yarn has run far enough along the lines of speed. As I said before, she was not built with a view to racing, but



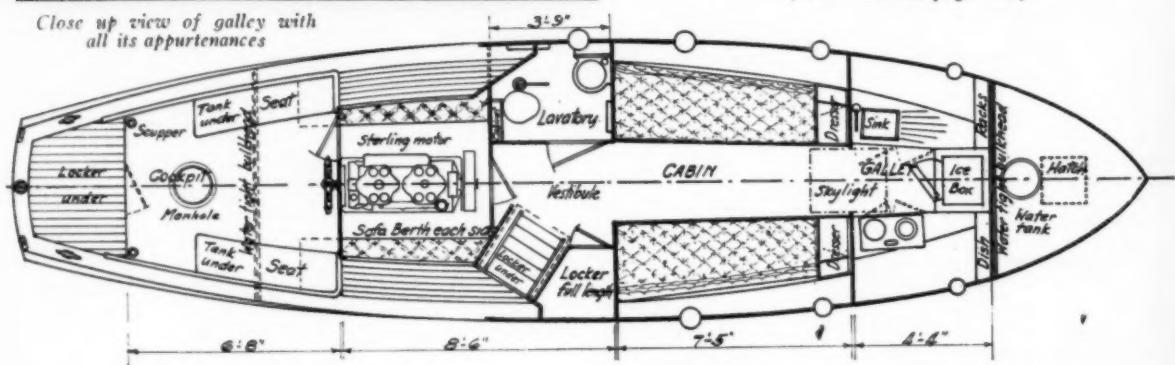
Body plan of Victory II, taken from the boat

for just what she is, the best little cruiser ever launched. I am proud of her, not because of her wins, but for her sea-going qualities, ease in handling and all around ability as a real boat.

On her I spend every moment all the year round that I can steal from my office and from early March to late December, whether ashore or afloat, she is my home over week ends and holidays. Except that her flag is down and ice compels me to haul her from her native element, she is never out of commission. Every Sunday a genial crowd of friends come aboard and then my labor of love must cease while we talk boat for the rest of the day. I dream, of course, of the time when northern waters in the summer and Florida in the winter—but enough of that. There are many men now who deserve life imprisonment for the discontent they have caused by articles on Florida, and only yesterday I received a postal from Chapman about swimming and motor boating every



Close up view of galley with all its appurtenances



Arrangement plan of Victory II

day. This racing at Miami has its advantages for more people than Carl Fisher and his friends.

No yarn of a cruiser is complete without a description of her cabin and accommodations, and were I to describe this little boat of mine which out-ideals any ideal cruiser, I fear I would be accused of seeing virtues not apparent to other eyes. Probably so, but those other eyes have not had the opportunity to observe as I have, and then again, we don't all have the same ideals. Therefore, let me say in the beginning that twenty-seven years on the water has taught me not to judge a cruiser by the number she sleeps. A cruiser is a cruiser for the number she accommodates, and here again opinions differ as to accommodations. Victory sleeps four and accommodates the same number, though two or possibly three is more comfortable.

The accompanying cabin plan and photos will show her interior better than I can describe, except I want to say that Rosie, even though he could make a picture of the Eighteenth Amendment look attractive, has not flattered Victory but merely brought out her good points. Also she was not dressed up for the occasion, but in the regular condition she is at all times, whether racing or cruising.

Beginning at the bow there is a large fore peak, reached by a hatch on deck, for the stowage of anchors, cables, etc., and at the after end next to the really water-tight collision bulkhead is an upright cylindrical water tank, holding about 75 gallons, three-quarters of which will feed by gravity. This is a good feature, as when pumping is necessary for sink or wash basin, you have a day or two

supply left and warning to fill tank. Next aft of the bulkhead is a completely equipped galley, including an ice box holding 200 pounds and food storage space larger than on the average fifty-footer. To starboard is the alcohol stove, and to port the sink with drain board, etc. Next aft of the partition separating cabin from galley is a set of three drawers on each side with lockers above. The two transom bunks are of ample length and width with tapestry cushions, pillows, etc. These cushions I had made with wire frame and springs stuffed with feathers and they are quite as comfortable as the average so-called Pullman berth. Under the bunks is a large stowage space for code flags, guns, canned goods, phonograph, heavy clothing, etc.

Then follows the entry way, with companion steps to starboard and a large toilet room to port. By this layout the cabin can be entered from the deck without passing through the engine room, and if a paid hand were carried, provides a means of privacy not otherwise obtainable. I have never seen this arrangement on any other small boat, except those of Luders design, and while it is true that you could shift the galley to the engine room and by eliminating this side entrance feature obtain a stuffy, cramped hole forward known as a stateroom. I for one don't want any such arrangement. This I know sounds like heresy to the average mind, which insists on a stateroom for anything over thirty feet, but as I said before, we all have different ideas as to accommodations.

Last and greatest comes the engine room, to my mind the most important part of the whole ship. And it is a

(Continued on page 106)



The Sterling motor in Victory II is now entering on its fifth season but is still going strong

# Over Seven Hundred Enrollments in MoToR BoatinG's Correspondence Course

Motor Boatmen From All Parts of the Country Respond and Send Us Letters of Approval

## QUESTIONS FOR LESSON No. 1

(Lesson No. 1 was published in the February issue)

**W**HEN we made the announcement about MoToR BoatinG's Correspondence Course in Small Boat Handling in the last issue of MoToR BoatinG, we had an idea that the plan would go across big. But we did not have the slightest thought that it would create the interest which it has. At the time of going to press with this issue, we have received over 700 enrollments. Letters have reached us from all parts of the country commanding us. Every one tells us that our plans for a correspondence course in just those fundamentals which every motor boatman should know is the best and biggest thing which any boating magazine has ever done for the sport of motor boating.

We should like to be able to quote from everyone of the many letters we have received but of course that is impossible on account of lack of space. It appears that almost everyone has written us from the Commissioner of Navigation at Washington down to the school boy who expects to be a sea captain some day, telling us how much they appreciate our efforts. A few sentences from a very few of those who have written us follow:

The Honorable E. C. Chamberlain, Commissioner of Navigation, Washington, D. C., writes us:

"The increasing use of motor boats both for pleasure and business emphasizes the necessity in the interest of safety to life of the navigation of such boats in strict conformity with the rules of the road and the laws covering their equipment. The facilities of the Federal Government for inspection service necessarily do not provide for constant supervision of such navigation, and it is essential that motor boat publications, yacht clubs and other organizations should co-operate with the Federal authorities in placing before motor boat owners the requirements of the law and regulations, in order that this form of navigation should have thrown around it all possible safeguards.

"I am satisfied that the efforts of MoToR BoatinG along this line have been of material effect and if the correspondence course which you propose will tend further in this direction, it should be beneficial."

A letter from F. H. Delano, Annapolis, Md., contains the following paragraph:

"I most certainly am with you 'for a better handling of motor craft'. Please enroll me in your navigation course as outlined in the February number. It is the best thing yet!"

E. L. Chase of Cambridge, Mass., writes as follows:

"Please enroll me for MoToR BoatinG Navigation Course. I think it is the biggest thing you have ever done for the sport."

Another interesting note comes from Harold Howarth of Westfield, N. J., containing the following: "I am only a boy of sixteen but have always been interested in motor boating and have studied rules and regulations of the sea and would like to be enrolled in the contest which I am sure I can pass."

Dr. William H. Taylor, Youngstown, O., has this to say about the Correspondence Course: "Please enroll my name in your Navigation Course. The ignorance exhibited in this respect by small motor boatmen is profound. I have been trying to get this information together for some time. Go to it! The true sportsman should know the rules of the game and live up to them."

W. C. Malin, Cleveland, O., writes as follows: "I have been yachting for twenty-five years and have had a college course in Trigonometry and Solid Geometry, but I have to admit that Bowditch is a complete enigma to me and the first light that ever filtered into my intelligence on the subject of navigation was found in your article in MoToR BoatinG a couple of years ago. The average yachtsman

must find navigation as taught by technicians a hopeless problem. You have the happy faculty of simplifying this subject and making it understandable, and I think your present course is the best thing that any yachting magazine has attempted."

Another booster is H. H. Kingston, Jr., of Rochester, N. Y. Mr. Kingston's letter contains this: "Your Correspondence Course in Seamanship and Piloting is the best yet."

John Kellner of Brooklyn, N. Y., writes us "In this month's issue of MoToR BoatinG I found the very thing I was longing for long ago, namely a course in Navigation of Motor Vessels. Being a small motor boat owner myself, I am very anxious to attend this course in which case I am enclosing my name and address. As a reader of MoToR BoatinG for a long time (since 1916) I would be very much pleased if you would add my name to your enrollment list."

C. M. Labunski, Mt. Clemens, Mich., enrolls with the following remarks: "I believe a course of this kind will fill a long felt demand. Your pictures are easy to understand, and I shall follow all the lessons as the magazine comes out."

Frederick Rudolph, West Hoboken, N. J., found the first lesson so interesting and instructive that he enrolls, sending us the following statement: "Your first lesson on seamanship which appeared in the February issue of MoToR BoatinG convinced me of the fact that it would be worth while to enroll."

Walter E. Shannon of Wakefield, R. I., falls in line with this statement: "I consider this course a very fine thing and should be very glad to take advantage of it."

H. O. Finger, Port Arthur, Canada, writes us the following in reference to the course: "I received my issue of MoToR BoatinG and the first thing I noticed was your correspondence course. I think this is a fine chance to find out a few things on navigation so please enroll me in the course."

W. T. Hamlin, Rear Commodore of the Chicago Motor Boat Club writes "Having read your plans, etc., for a Correspondence Course in Seamanship, Piloting and Small Boat Handling in the February issue of MoToR BoatinG, I take great pleasure in offering my co-operation by enrolling for it. I trust that all motor boat owners, will take advantage of your generous offer by giving their hearty co-operation and enrolling at once, as there is always something new to learn about handling a motor boat and it will be well worth the time they spend on the course."

G. A. Patrie, Sheboygan, Wis., tell us in the following paragraph what he thinks of the idea: "I believe this course will prove one of the best features in your publication for the year 1921."

The most valuable thing possible is the way W. B. Staley of Baltimore, Md., sizes up our efforts. He writes us this: "Kindly enroll me a member of your Navigation Course. I want to say in this connection that I do not think you could do anything more valuable to the average owner or to arouse interest in boating as this undoubtedly will. I trust that you will meet with hearty co-operation and have a large class."

R. E. Smith, Earleigh Heights, Md., enrolls with this comment: "I think your course on Navigation is a splendid thing and wish to be enrolled."

C. E. Wilson of Woodfords, Me., a practical motor boatman himself, wishes to enroll and does so writing us as follows: "I have had six or eight years of practical boating and yachting but wish to get all the points and information possible and I am sure I shall enjoy this course."

W. H. Durham, St. Joseph, Mo., sends the following congratulations: "I congratulate you upon this new feature of

(Continued on page 114)

# Lights for Your Boat Simplified

## MoToR BOATING's Navigation Course—Lesson No. 2

See pages 19, 21 to 25, 110, 114 and 116

THE second lesson in MoToR BOATING's Correspondence Course deals with the types of motor boats and the proper lights for all classes and kinds of motor and sailing vessels. In order to properly navigate a boat at night it is necessary to be thoroughly acquainted with the many varied lights which are apt to be met with. Experience will help to identify the lights at night, and in cases of doubt it is always advisable to proceed with caution. By practice alone can one become thoroughly grounded in all the essentials of small boat handling. The man at the wheel is the one upon whom rests the responsibility for the safe handling of the boat and he in particular is the one who must be familiar with all the rules and regulations which are so essential. When operating at night good practice necessitates that no other lights outside of the specified navigation lights be shown anywhere on the deck of a vessel. Not only are extraneous lights disconcerting to the pilots of other vessels, but the glare of nearby lights on a boat will interfere with the vision of its own pilot. The visibility at night is at its best when the pilot is in absolute darkness. The descriptions which follow together with the illustrated lessons on the following pages will enable the amateur sailor to acquire a first-hand knowledge of this subject.

### CLASSES OF BOATS

When observing the lights on a distant vessel there is always a reasonable doubt as to whether the vessel is an ocean-going ship or an inland vessel. There are several sets of laws which govern the operation of ships. The international rules are provided for sea-going vessels which travel from country to country and the uniform rules adopted apply throughout the world. The inland rules are in the main identical and differ in a few particulars from them and are used by sea-going vessels on inland waters. The pilot rules are provided for the guidance of those vessels which are not apt to be required to go to sea or outside of the limits of their own waters. The inland rules are the ones with which we are principally concerned and the requirements of these will be followed unless otherwise stated. All floating craft are subdivided into one of the following classes: Sea-going vessels, inland vessels, tow boats, sail boats, ferry boats, canal boats and barges, rafts, scows, etc. Motor boats are classified into three distinct subdivisions, depending upon the overall length of the boat.

### BASIC RULES

Colors are used to differentiate one light from another and have distinct and separate meanings. White, red and green lights are used and these are arranged to show in four different ways. There are 10, 12, 20 and 32-point lights indicating the arc of the compass through which they would be visible. The 32-point light being one visible from every point of the compass. The red and green lights show through 10 points for all classes of vessels. White lights which are designed to show ahead are always made to show through twenty points. Lights which show through 32 points are naturally visible from ahead also. If these fundamental conditions are remembered no trouble will be encountered in connection with the various lights.

### MOTOR BOAT LIGHTS

See Figs. 26 and 32

For the purpose of classification motor boats have been divided into three separate groups according to their size. Class 1 consists of boats under 26 feet in length. Class 2 will take in all boats between 26 and 40 feet in length, and Class 3 provides for everything from 40 to 65 feet in length. The lighting system adopted is uniform and simple. Small boats in Class 1 are privileged to employ a combination lantern which has a red lens on the port side and a green lens on the starboard side. This must be so constructed to show a red light from dead ahead to 2 points abaft the beam on the port side. The green light will show similarly from dead ahead to 2 points abaft the beam on the starboard side. A white range light is carried at the stern which shows entirely around the horizon. If desired separate port and starboard lanterns may be used instead of the single combination light. If the port and starboard lights are carried as separate lanterns then it will be necessary to also carry a twenty-point white bow light in the forward part of the boat in addition.

Class 2 boats are provided with a white light as near the stem as practical to show over an arc of the horizon of 20 points of the compass, that is, from 2 points abaft the beam on the port side to 2 points abaft the beam on the starboard side. This lens shall not be less than 19 square inches.

Separate port and starboard red and green lights are carried on either side of the boat so arranged that the red or port light shows from dead ahead to two points abaft the beam on the port side. The green or starboard light will show from dead

ahead to 2 points abaft the beam on the starboard side. The size of these lenses shall not be less than 16 square inches. A white light aft to show all around the horizon.

Class 3 boats are provided with lights in the identical fashion as Class 2 craft, the only difference being in the size of the lenses. The white bow light is required to be 31 square inches in area and the port and starboard lights 25 square inches, in area each. It is further required that suitable screens are fitted to prevent the port and starboard lights from being seen across the bow. The lengths required for these are 18 inches for Class 2 boats and 24 inches for Class 3 boats.

### LIGHTS FOR AUXILIARY VESSELS

See Fig. 28

Motor boats proceeding under both sail and power will at night show only the red and green side lights properly screened as provided above to show over only 10 points of the horizon. A motor boat under sail and power will never show a white light except when being overtaken by another vessel. A white light is then shown temporarily over the stern.

Any vessel, that is, a motor boat when propelled in whole or in part by machinery shall be considered a motor vessel. The Motor Boat Act explicitly provides however that a vessel of this type shall carry at night the lights of a sailing vessel only but no white lights. It is well to refer back to lesson No. 1 where the rules governing the action of sail boats and motor boats were made clear, particularly with reference to the change in status in the auxiliary vessel from day to night operation. This applies only to vessels under 65 feet in length. Vessels over this size operating under both sail and power are classified as steam vessels at all times.

### INLAND STEAMERS

See Fig. 39

Vessels of the type shown in figure 39 are lighted at night in exactly the same way as motor boats of Classes 2 or 3. The sizes of lenses are larger but the arrangement of lights is identical. A white light forward will show through 20 points of the horizon. The port and starboard lights will show over 10 points of the horizon while the white range light aft will show through 32 points. The range light aft is arranged so as to be carried higher than the bow light. The side lights should be carried about the same plane as the bow light.

### STEAM YACHTS

See Fig. 29

Yachts and similar vessels which might be considered sea-going craft are lighted in conformity with the international rules which differ slightly from the inland rules. The principal difference consists in the after range light which will show through an arc of 20 points of the compass in the same way as the white bow light. A range light which shows through 32 points is not carried on these vessels. According to this information an overtaking vessel would see no lights whatever. Provision is made therefore for these boats to carry a small light on the taffrail which shows over about 12 points directly astern.

### SEA-GOING VESSELS

See Fig. 34

All vessels which regularly navigate the oceans are termed sea-going. The lighting arrangement for this class of boat is identical with the lighting described for the sea-going vessel previously, that is, there will be a white light on the forecastle showing ahead through 20 points and a range light on the main mast showing through the same arc and placed higher than the forward light. The usual red and green side lights showing through 10 points are also carried. Sea-going vessels of this type usually carry also the small taffrail light showing astern through 12 points.

### SAILING VESSELS

See Fig. 27

The term sailing vessel is applied to all boats which are not supplied with motor power. In addition a vessel which is proceeding with both sail and power during the night is also classified as a sailing vessel. The lighting arrangement for this type of craft is simply the usual red and green side lights showing ahead through 10 points of the compass. No other lights are carried except that a white light or a flare-up light is kept available to show over the stern in the event of an overtaking vessel approaching.

### FERRY BOATS

See Fig. 31

Special provision has been made in the regulations for the type of craft generally termed double-ended ferry boats. They are provided with two central white range lights at the same height above the water line and generally placed on top of the pilot houses on each end of the vessel. These show through 32 points or ex-

(Continued on page 102)

# Proper Navigation Explained Pictorially

Hints on Motor Boat Handling, the Proper Lights  
For All Classes of Boats and How to Show Them

MoToR BOATING'S CORRESPONDENCE COURSE—LESSON NO. 2

See also Pages 19, 20, 110, 114 and 116

Photographs by M. Rosenfeld & E. Levick

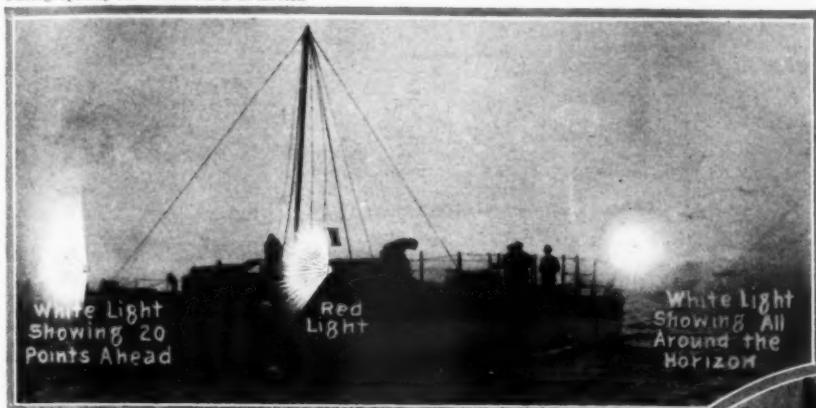


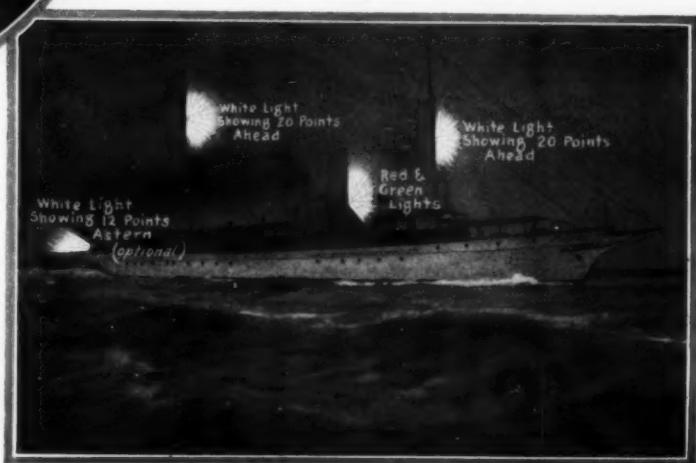
Fig. 26—A motor boat when underway, such as the one illustrated at the left is under the necessity of carrying a white light forward which shall be so constructed as to show an unbroken light over an arc of the horizon of 20 points of the compass; it shall be so fixed as to throw the light 10 points on each side of the vessel from dead ahead to 2 points abeam on either side. On the starboard side a green light showing through 10 points of the compass from dead ahead to 2 points abeam on the starboard side. On the port side a red light constructed in the same manner as the starboard light to show through 10 points on the port side. These red and green lights are required to be screened so as not to show across the bow. In addition a white light showing all around the horizon at the stern which shall be placed higher than the white light at the bow

Fig. 27—In the case of the sailing vessel below, the law requires only that the red and green port and starboard lights be carried when the vessel is underway. These are screened and must be so arranged as to show through 10 points of the compass from dead ahead to 2 points abeam on their proper sides. A white light is never carried. In the event of the sailing vessel being overtaken by another vessel a white light or a flare up light is shown over the stern to warn the other vessel of its presence



Fig. 28—The motor vessel above with auxiliary sail by day assumes the characteristics and rights of a motor vessel. At night this situation is reversed. The auxiliary now becomes a sailing vessel and shows only the red and green port and starboard lights as described under figure 27 for sailing vessels. There is an element of danger in this condition as it is not always certain whether the operator knows whether he is supposed to be a sailing vessel or a motor vessel. The rights of way will vary for each type as described in the previous lesson

Fig. 29—The ocean going steam vessel or steam yacht as picture at right shows, is required to carry on the foremast or in the forward part of the boat a white light so constructed as to show over an arc of horizon of 20 points of the compass. This light should show forward from 2 points abeam the beam on the port side to 2 points abeam the beam on the starboard side. It shall be visible for at least five miles. On the starboard side a green light so constructed as to show from dead ahead to 2 points abeam the beam on the starboard side over an arc of 10 points of the compass. On the port side a similar red light constructed in the same way to show over an arc of 10 points on the port side. An after range light in line with the keel and at least fifteen feet higher than the forward light so constructed as to show through the same arc of the horizon as the forward white light. This shall be from 2 points abeam the beam on one side through 20 points to 2 points abeam the other side. In addition since there is no light showing astern it is optional with them to carry an additional light visible from astern only over 12 points of the horizon. Most ocean going vessels carry such a light on their 'taffrail'



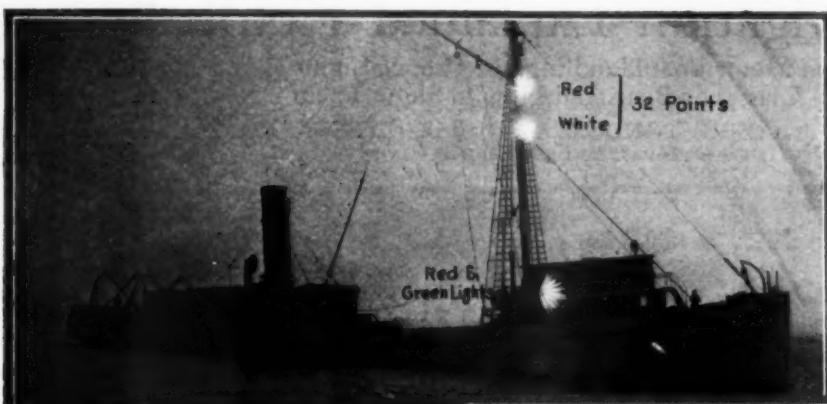


Fig. 30 (At the left)—Fishing boats of more than ten tons, when engaged in tending their trawls or nets and underway, show the usual red and green side lights and also two lights vertically arranged, the upper one of which is red and the lower one white. These are arranged to show completely around the horizon. When underway and not engaged in fishing they will display the customary lights for vessels of their type

Fig. 31—Ferryboats of the double ended type which are common on all inland rivers carry two central white range lights at the same height above the waterline and generally placed on top of the pilot house cabins. These are to show through 32 points and in addition the customary 10 point red and green side lights are carried. In harbors where there is much traffic, special designating lights are carried amidships which serve to identify the different lines to which they belong. Vessels acting as ferryboats and not of the double-ended type carry the regulation lights for inland steamers



Fig. 32—A small motor boat of class 1 under 26 feet length. The regulations provide that a combination red and green light be carried at the bow so arranged as to show a red light on the port side from dead ahead to 2 points abaft the port beam and a green light to show on the starboard side from dead ahead to 2 points abaft the starboard beam. A white light showing all around the horizon is carried at the stern. It is optional to carry two separate red and green side lights but if this is done it is necessary to carry also a 20 point white bow light the same as a boat in class 2

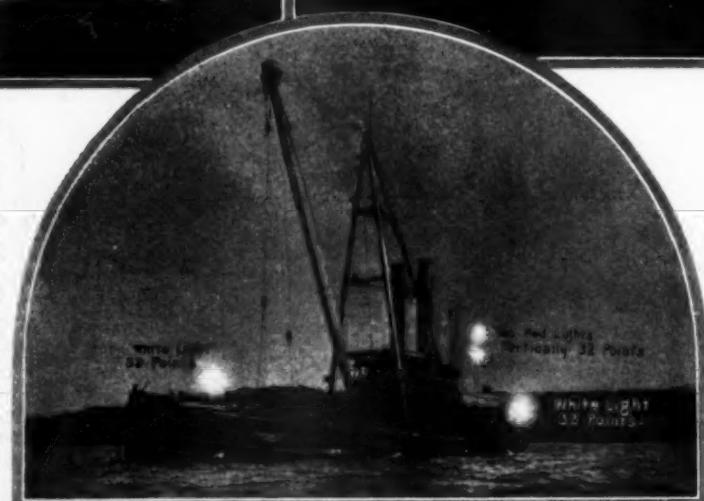


Fig. 33—A wrecking steamer, when anchored and working on a submerged wreck, is required to indicate the fact by prominently displaying two vertical red lights showing all around the horizon. In addition white lights showing all around are placed at the bow and stern if a single vessel or at the outboard corners of the group if there are several vessels in the plant. This serves as a warning to all other vessels to keep clear and allow ample sea room

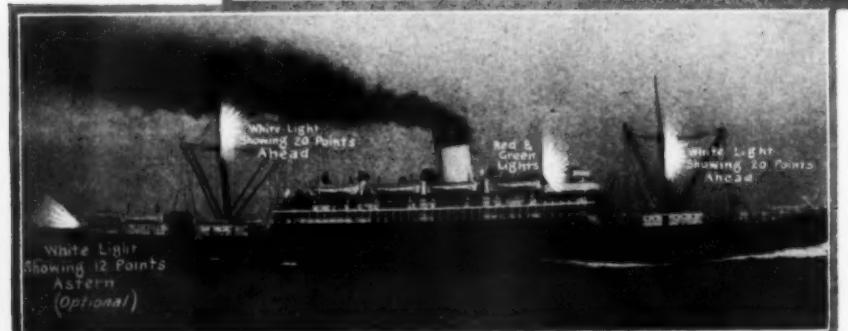


Fig. 34—The ocean going steamship which traverses the high seas operates under the International Rules. These provide that a white light showing through 20 points of the compass from 2 points abaft the beam on one side to 2 points abaft the beam on the other, 2 points must be set a similar light is carried which must be placed higher than the bow light. The vertical height should be at least 15 feet. Red and green side lights are carried as is customary on all other classes of vessels. A small white light showing about 12 points astern is carried at the taffrail to serve as a warning to other sailing vessels. This light is not required but it is optional and will generally be found in position



Fig. 35 (At the left)—A pilot vessel when engaged on her station at night, will show her character by displaying prominently two vertical lights showing all around the horizon, the upper one of these will be white, and the lower one red. The regulation red and green port and starboard lights are also carried when the vessel is underway. Should the pilot vessel anchor on station the red and green side lights are extinguished. When not engaged in pilotage duties the customary white bow light and after range light are carried similar to other vessels

Fig. 36 (At the right)—In the unfortunate event that a steamer runs aground in the channel or fairway it will show the fact by displaying the regulation white anchor lights and in addition two vertical red lights showing all around the horizon. In inland waters a steamer aground will only be required to display the white anchor lights

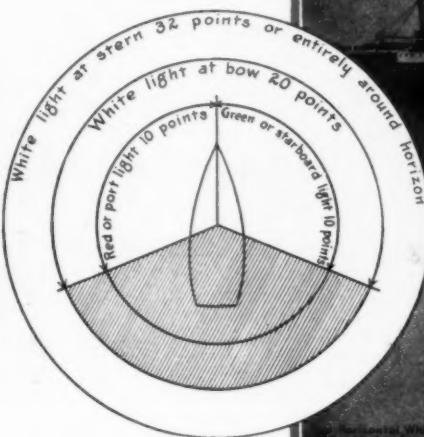


Fig. 38—Towboats on certain harbors operating with several barges towed in tandem will carry white vertical lights, two or three, according to the length of tow. The red and green side lights as usual while the barges strung out astern carry a single white light at the bow and stern of each one. The aftermost barge will show two white lights horizontally arranged at the stern

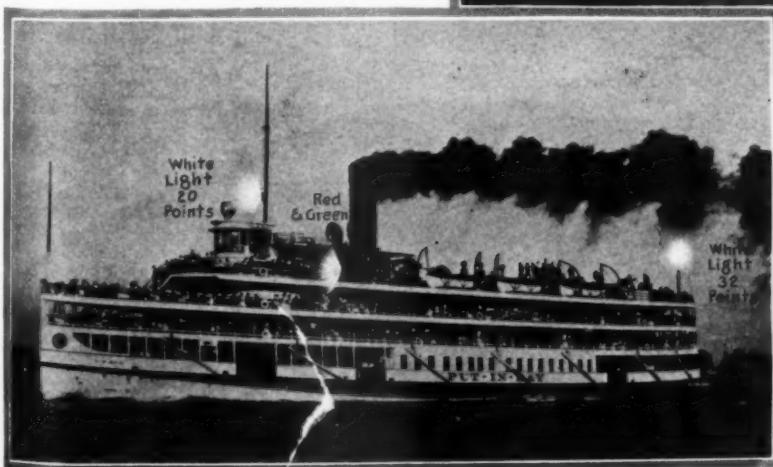
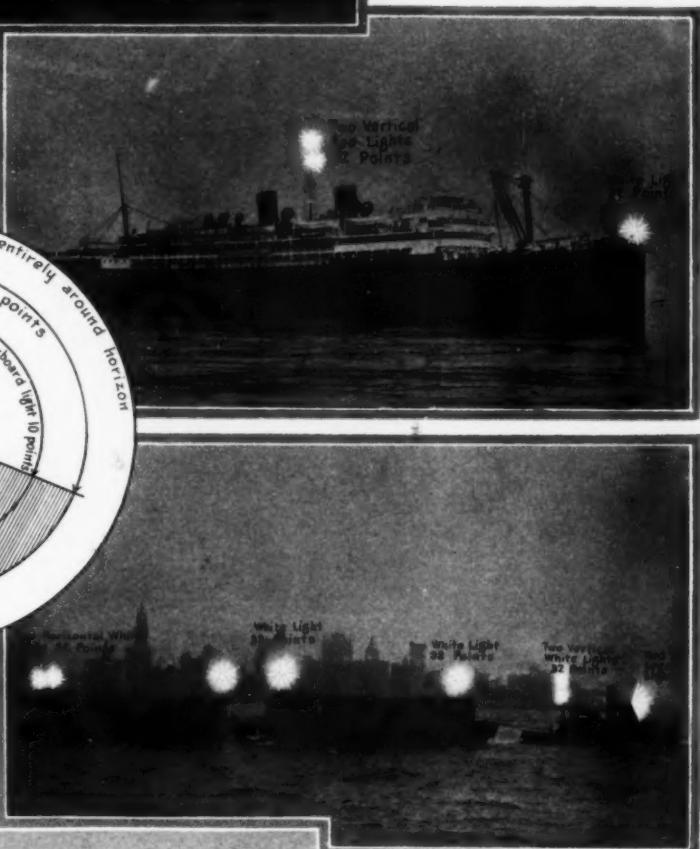


Fig. 39—Inland steamers of the type common to Long Island Sound, the Hudson River, Chesapeake Bay, etc., operate in conformity to the inland rules. They display the 20 point white bow light in the forward part of the vessel shooting forward from 2 points abeam the beam on the port side to 2 points abeam the beam on the starboard side. A red light on the port side shows from dead ahead to 2 points abeam the port beam. A green light shows from dead ahead to 2 points abeam the starboard beam and a white light at the stern shows completely around the horizon or 32 points. The white light at the bow is placed higher than the white light at the stern so as to indicate which way the boat swings more clearly

Fig. 40—We show, at the right, a small harbor tug towing a barge. The lights for this class of vessel are the red and green port and starboard lights showing through 10 points of the compass as previously described and two white lights showing all around the horizon placed vertically. If the length of the tow exceeds six hundred feet an additional white light is carried. The barge is provided with a white light showing all around the horizon at bow and stern. The boats in the background at anchor all show a single white light to designate the fact that they are not underway

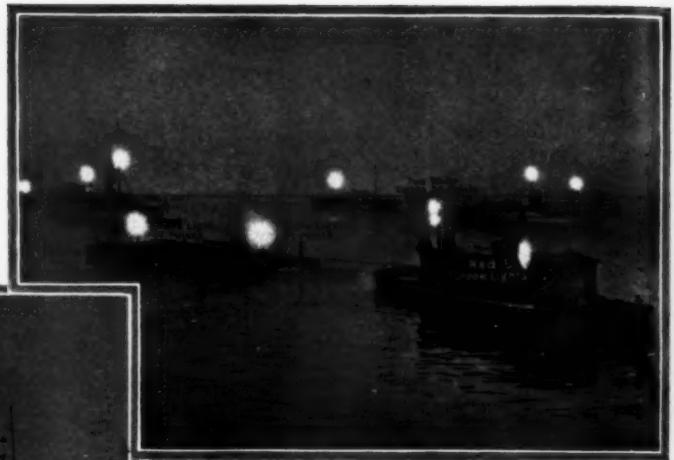


Fig. 41—At the left is a large dredge which is frequently met with. The day signals for this class of vessel are two red balls conspicuously displayed. At night two red lights showing all around the horizon are placed where they can be best seen and in addition a single white light showing all around the horizon is placed at each outward corner of the barge or plant

Fig. 42—Barges and canal boats massed in tiers, towed at a harbor as on the Hudson River are lighted in a distinctive way. A white light showing all around the horizon is placed at the outboard bow of each outside barge in the tier. In addition the last barges in the fleet place white lights at the outboard stern of the outboard boats. The tow boat in this case will carry the customary red and green side lights and since the length of the tow from the stern of the towing vessel to the stern of the last vessel towed exceeds six hundred feet will carry three white range lights showing through 32 points of the compass. The white bow light is not carried on the towing vessel

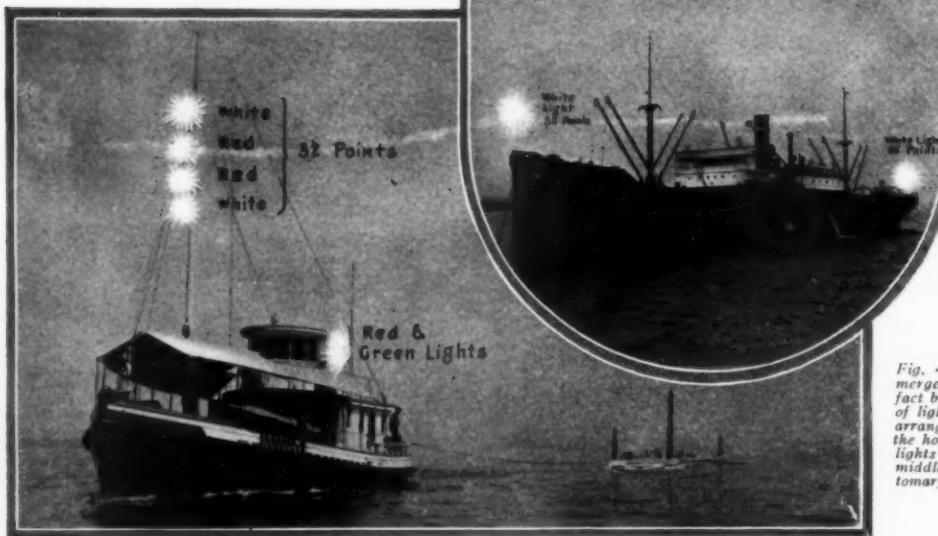
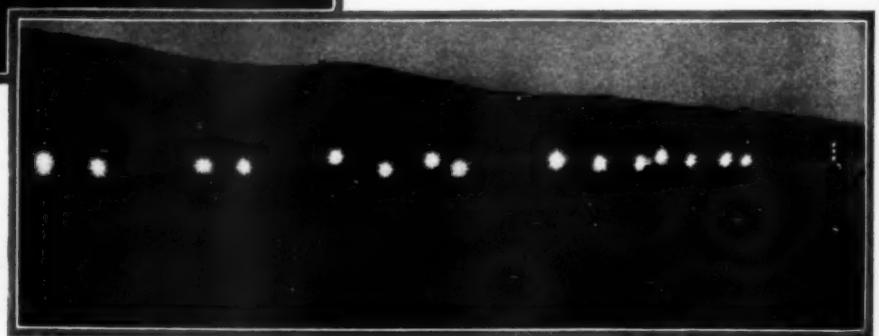


Fig. 43—The ocean going steam ship over 150 feet in length shown here when at anchor will display a white light forward at a height of not less than twenty and not exceeding forty feet above the hull and at or near the stern at such a height that it shall not be less than fifteen feet lower than the forward light, another such light. These lights should show a clear uniform light visible all around the horizon

Fig. 44—The vessel towing submerged wreckage indicates the fact by displaying a special group of lights which shall be vertically arranged and visible all around the horizon. The upper and lower lights being white and the two middle ones being red. The customary port and starboard lights are also carried

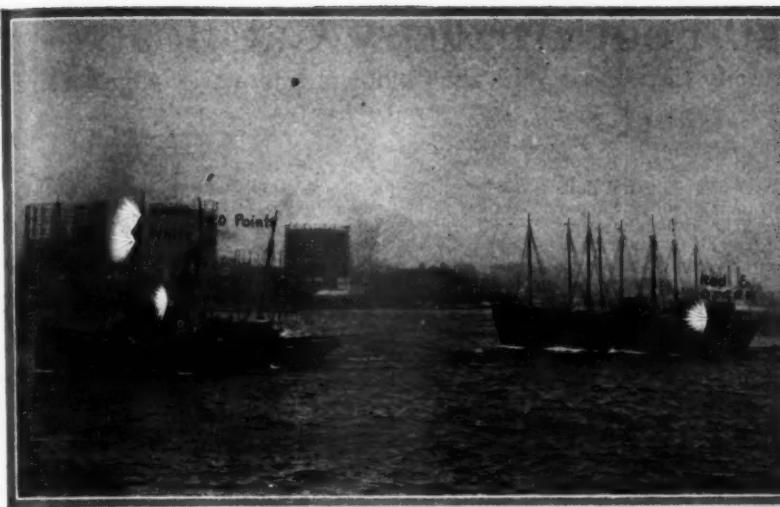


Fig. 45—Sea-going tow boats when towing sea-going barges carry the lights as required under International Rules. The white bow lights are arranged in the forward part of the vessel to show through 20 points of the compass. The regulation red and green lights on their proper sides are carried as is customary. Where the tow operates in congested waters the barges are generally towed abreast of one another. A single red and green light is carried on the outboard barges in its proper place. Under these circumstances the tug displays two white lights on the foremast indicating that the tow is less than 600 feet in length. After they reach open waters the tug will show three white lights on the foremast and the barges will string out in tandem formation over a great length. The barges will now each display red and green side lights also while the last barge in the string will show two white lights horizontally arranged. A small 12 point light is shown at the stern of any and each barge to aid following barge in steering



Fig. 46—A cable laying steamer or outfit engaged in this work displays a special series of lights. These are vertically arranged and three in number. The upper and lower ones are red and the intermediate one white and they all show completely around the horizon. Should the steamer have way on it will carry the customary side lights. In the event of a barge being towed along side as our picture shows a 32 point white light is also carried on the barge

(See also pages 19, 20, 110, 114 and 116)

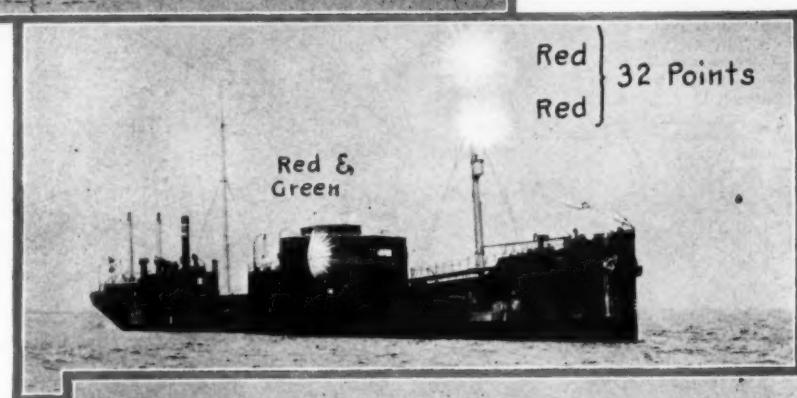


Fig. 47—It will occasionally happen that an ocean going steamship will be partially disabled by the loss of the rudder or possibly some of the propeller blades. This contingency calls for the display of two red lights vertically arranged to indicate that the vessel is not under complete control. The red and green side lights are shown as usual if the boat is underway

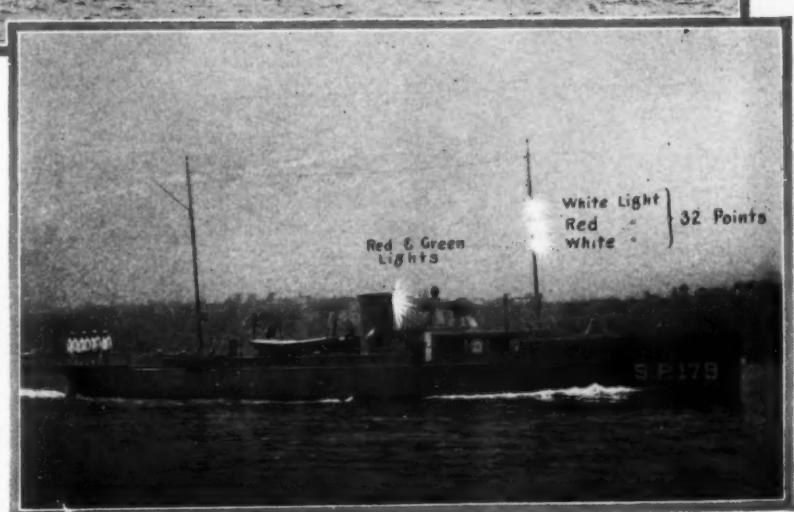


Fig. 48—It occasionally happens that the Navy Department or other government authority finds it necessary to patrol certain waters. Its vessels at night will indicate their character by showing three lights vertically arranged, the upper and lower of which will be white and the intermediate one, red. These will show entirely around the horizon and indicate that the vessel is a government patrol boat. The customary red and green side lights are also carried but no other lights are shown

## Porpoise, a 20-Foot Auxiliary Cat Boat

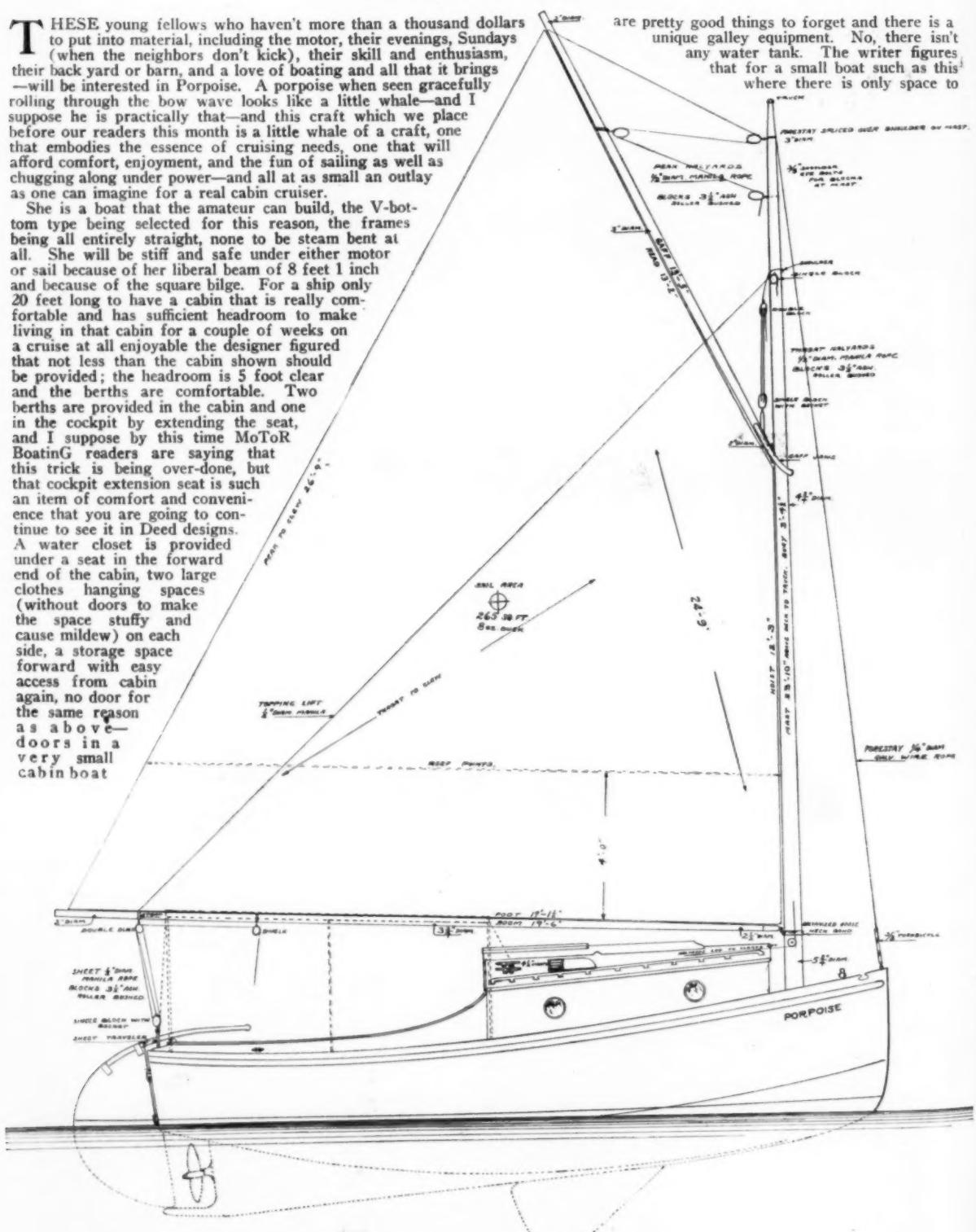
## Any Amateur Can Build This Handy Little Boat With the Complete Information Given Here

*Designed by William J. Deed*  
Exclusively for MoToR BoatinG

THESE young fellows who haven't more than a thousand dollars to put into material, including the motor, their evenings, Sundays (when the neighbors don't kick), their skill and enthusiasm, their back yard or barn, and a love of boating and all that it brings —will be interested in Porpoise. A porpoise when seen gracefully rolling through the bow wave looks like a little whale—and I suppose he is practically that—and this craft which we place before our readers this month is a little whale of a craft, one that embodies the essence of cruising needs, one that will afford comfort, enjoyment, and the fun of sailing as well as chugging along under power—and all at as small an outlay as one can imagine for a real cabin cruiser.

She is a boat that the amateur can build, the V-bottom type being selected for this reason, the frames being all entirely straight, none to be steam bent at all. She will be stiff and safe under either motor or sail because of her liberal beam of 8 feet 1 inch and because of the square bilge. For a ship only 20 feet long to have a cabin that is really comfortable and has sufficient headroom to make living in that cabin for a couple of weeks on a cruise at all enjoyable the designer figured that not less than the cabin shown should be provided; the headroom is 5 foot clear and the berths are comfortable. Two berths are provided in the cabin and one in the cockpit by extending the seat, and I suppose by this time MoToR BoatinG readers are saying that this trick is being over-done, but that cockpit extension seat is such an item of comfort and convenience that you are going to continue to see it in Deed designs. A water closet is provided under a seat in the forward end of the cabin, two large clothes hanging spaces (without doors to make the space stuffy and cause mildew) on each side, a storage space forward with easy access from cabin again, no door for the same reason as above—doors in a very small cabin boat

are pretty good things to forget and there is a unique galley equipment. No, there isn't any water tank. The writer figures that for a small boat such as this where there is only space to



*Outboard profile of Porpoise, a 20-foot auxiliary cat boat*

squeeze in a 5-gallon tank with piping to pump or faucet at sink that the young fellow cruising in her will be ahead of the game to carry a 5-gallon water jug which he can always replenish with clean, cold, fresh water. This scheme also jibes in well with the whole galley plan. You can pick up the whole galley and row ashore with it for the lunch on the beach that makes up part of the enjoyments of a cruise. Of course, you can have a water tank installed up in the forepeak, where there is no more than room for the necessary rope and other gear and duffle carried on a cruise, or the tank can go under the cockpit. The galley stove is a single burner affair on the order of a camp stove installed in a heavily built box which forms a step in entering the cabin; this box is metal lined, of course. A similar box on the other side of the centerboard trunk holds dishes, cutlery, can openers, bottle openers, for they still use them, so I am told, and both these boxes can be set right in the dinghy to take ashore or can be taken into the cockpit if the meal is cooked there. The sink is built right in under the small section of transom cushion which lifts off, and this sink drains into a waste tank under the cockpit floor; a rotary hand pump mounted on the bulkhead is piped to this tank as well as to the bilge of the boat and either can be emptied at will by regulating the shut-off valves in the pipe line. A few twirls will empty either. There is plenty of storage space under the transoms for the cruising gear brought aboard. Under the cockpit seat is a zinc-lined space that can be used as an ice box or as a fish box, and if the fish you catch are too big to go into this space you can put them in the cockpit and you won't hurt the boat, for she is a plain, simple, rough and tumble sort of a craft that won't spoil with use.

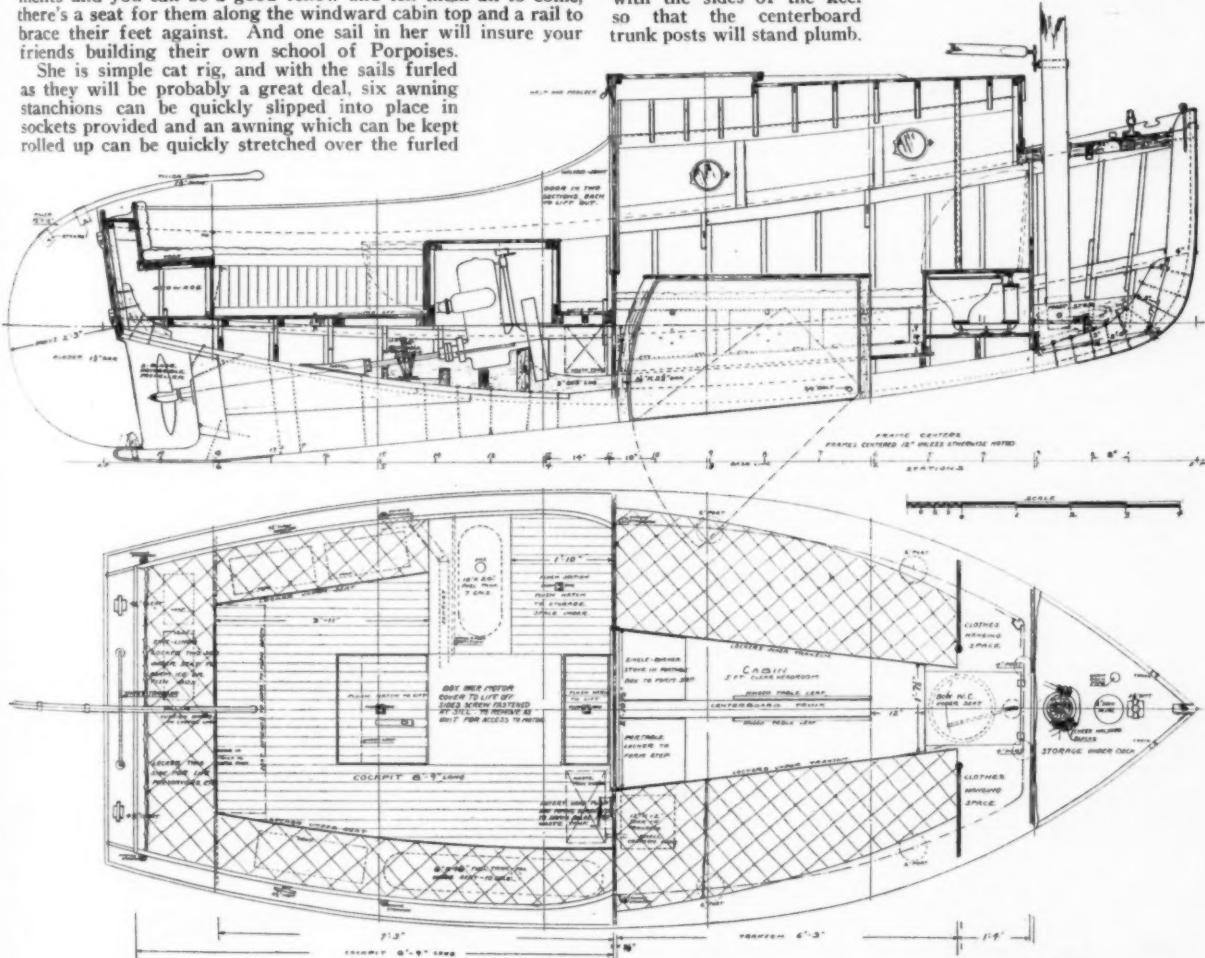
She might have been raised deck—and she almost was—but the advantage of a trunk cabin for ventilation, for reducing the height of side, the advantage of appearance were also backed up by the argument that the average young fellow—or old, for that matter—who has a boat like Porpoise has more friends than he ever before knew that he possessed, and they all want to go out for a trip the same day, so Porpoise was made to suit the requirements and you can be a good fellow and tell them all to come, there's a seat for them along the windward cabin top and a rail to brace their feet against. And one sail in her will insure your friends building their own school of Porpoises.

She is simple cat rig, and with the sails furled as they will be probably a great deal, six awning stanchions can be quickly slipped into place in sockets provided and an awning which can be kept rolled up can be quickly stretched over the furled

sail on the boom and snap-hooked to these stanchions, which have guys at the corners to keep the awning taut. This is as simple a rig as the sail is. A motor of 5 or 6 horse power will drive her along 7 to 8 miles an hour using a two blade reversible propeller of about 18 inches diameter, which can be set neutral behind the deadwood when under sail. There is space for any suitable motor. The fuel tanks are under the seats on top of the cockpit floor. The exhaust is led to the stern, but the details of the installation of course depend on the particular engine installed. A good husky single cylinder, two cycle or four cycle as you fancy, turning up 500 to 800 r.p.m. is what you need; the box can be made to suit the height and width of the motor installed.

She is strong, husky, simple in construction, plain in finish, good and wholesome in appearance, and all solid comfort.

In the February issue we went into considerable detail as to just how to go about the construction of a small boat, and all of those instructions are applicable in the case of Porpoise except where the question of bending frames and of planking comes in. Getting out the keel, stem, stern post, clamps, etc., setting up the back-bone of the ship on the keel blocks, setting up molds, etc., is the same procedure except that in the case of Porpoise we can lay out each frame occurring at stations, mark the stock, fasten the bottom frame to the topside frame by means of the reinforcing knee at the chine, cut out for the chine log, cross stay these frames so they cannot change shape and set them up in place, squaring (horning it is called), them with the keel and plumbing them, and run ribbands to hold them in place. With these station frames in place the intermediate frames can be faired in by setting the two lengths of frame against ribbands, marking and cutting and fitting the ends butting against the chine log, then fastening the reinforcing piece in place and setting the frame in place. Framing this craft ought to be a quick, simple job. The keel may seem to be a complicated job on account of the centerboard slot and the reduction in width forward where it meets the stem, but it is only a simple matter after all. In cutting the slot be sure to have the sides of the slot vertical and parallel with the sides of the keel so that the centerboard trunk posts will stand plumb.

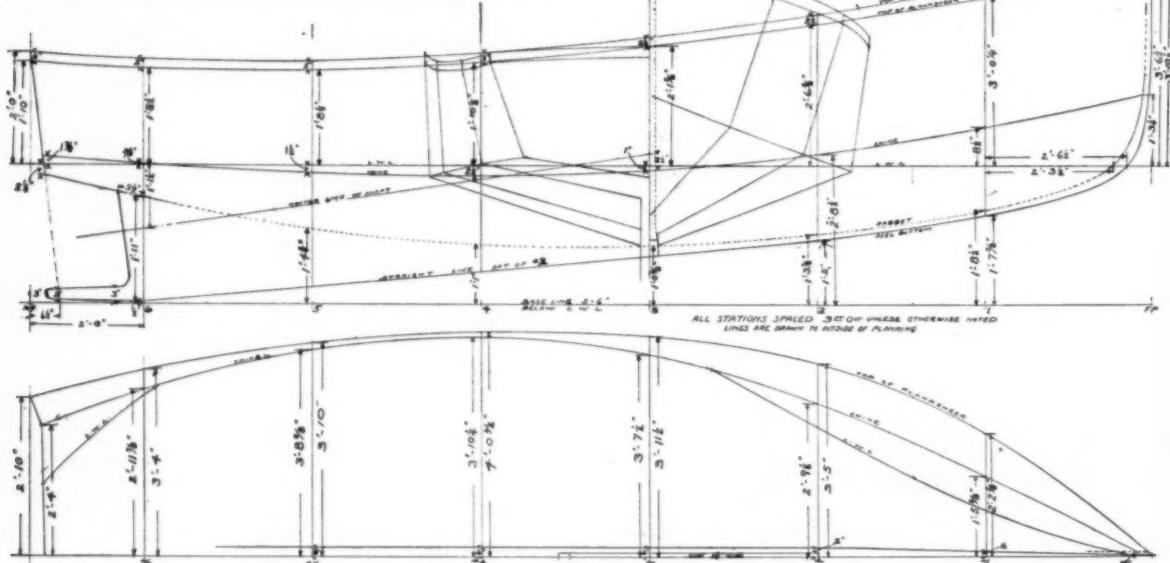


Construction section and arrangement plan for Porpoise, a 20-foot auxiliary cat boat

Be sure and use plenty of care in the joints and seams around the centerboard casing and trunk and use plenty of white lead, lay it on thick so that when you squeeze the boards together it oozes out the seams. And draw everything up tight.

In planking, practically the same operation described for Nomad fits Porpoise, except that you divide the distance from keel to chine into equal parts in obtaining the width of plank strokes necessary as well as the distance from chine to sheer. The writer has not adopted the batten seam construction because of the complicated work needed in laying out, marking, cutting, and fitting this type. Simply divide up the distances both above and below the chine and get the planks out, secure it, finish it off as specified, and as described in last month's *MoToR Boating*.

After your boat is planked, fit cockpit floor beams, deck beams, and when sill in deck has been fitted get out and mount the house sides. For these you will need wide boards in order not to have too many seams, and for this you will find cypress good material because it comes in wide boards and it will also finish well, either painted or finished natural. With the rabbeted house sill in place hold the lower board of the house side in the rabbet and mark a line on this board parallel with the bottom of this rabbet so that the board can be planed to this line and exactly fit the rabbeted sill. Fit the ends of the board into the rabbet of the corner post forward. Fasten the board in place with brass or galvanized screws with heads counter-sunk and wood plugged. Be sure to clamp board in place securely in the middle to prevent strain until house is further along. With the bottom board in place mount the other board on top of it,



Complete lines in profile and plan for Porpoise

using a halved joint with the over-lapping portion of the upper board on the outer side of the lower board so as to provide a water-tight joint.

Previous to fitting the two house side boards together the adjoining edges are to be laid together, marked with a line crossing the seam at right angles, and bored with 5/16 inch bitt 3 inches deep into each board. Birch dowel is to be driven into one board at each hole and when boards are fitted together on the job these dowels will bind the two together. Care must be exercised in fitting these dowels. A couple of reinforcing pieces can now be fitted in place by round head brass screws. When the house sides and forward end have been erected the cabin bulkhead at forward end of cockpit can be fitted, the 3/4 inch piece on inner side of house top to take house top beams fitted in place by screws and beams fitted, top laid, canvased, and companionway slide and doors fitted. It is well to do the interior joiner work before the house top is put on because you have more room to swing a hammer without shoving it thru the roof.

The finishing of the craft is unnecessary to describe here as each will go as far as he likes into detail in building his transoms, seats, boxes, boarding ladder, etc. The finish also is a matter that the individual will work out to taste, but our suggestion is to keep it plain and simple—a white hull with green underbody, salmon or gray decks, cockpit floor, and cabin roof, perhaps a bright cockpit floor, perhaps covered with linoleum, the interior white paint, not enamel, with oak or cypress trim, the cockpit trim oak or cypress bright. Paint the barn-door rudder the same as the hull.

Arrangements have been made whereby those desiring full scale blue prints of the drawings for Chum, Nomad or Porpoise can secure them at nominal cost by addressing F. W. Horenburger, 63 West 184th Street, New York City, N. Y.

#### SPECIFICATIONS

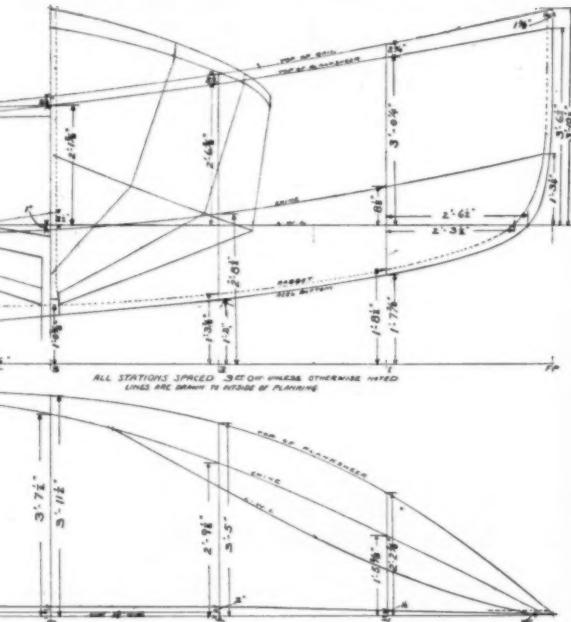
In General: In carrying out these specifications only the best of material and workmanship are to be employed. All lumber shall be air-dried, free and clear of all damaging knots, checks, dry rot, etc., that would render it unfit for service. All fastenings not otherwise specified to be hot dipped galvanized iron.

Boat to be built under cover fully protected by insurance until completion.

Dimensions of the completed boat to be: Length over all, 20 feet, 0 inches; Breadth over plank, 8 feet, 1 inch; Draft extreme, 2 feet, 6 inches.

Keel: White oak or yellow pine sided 4 inches from aft end to just forward of the centerboard trunk, diminishing to 2 1/2 inches at stem. About and below shaft center line keel to be reduced in siding to 2 1/2 inches and well tapered to provide easy flow of water to the propeller. Slot for centerboard to be cut 1 1/4 inches wide by 4 feet, 7 1/2 inches long. Keel to be rabbeted for planking and to be in one length.

Centerboard Trunk: At each end of slot in keel oak posts 1 1/4 inches x 2 1/2 inches to be accurately fitted and riveted in

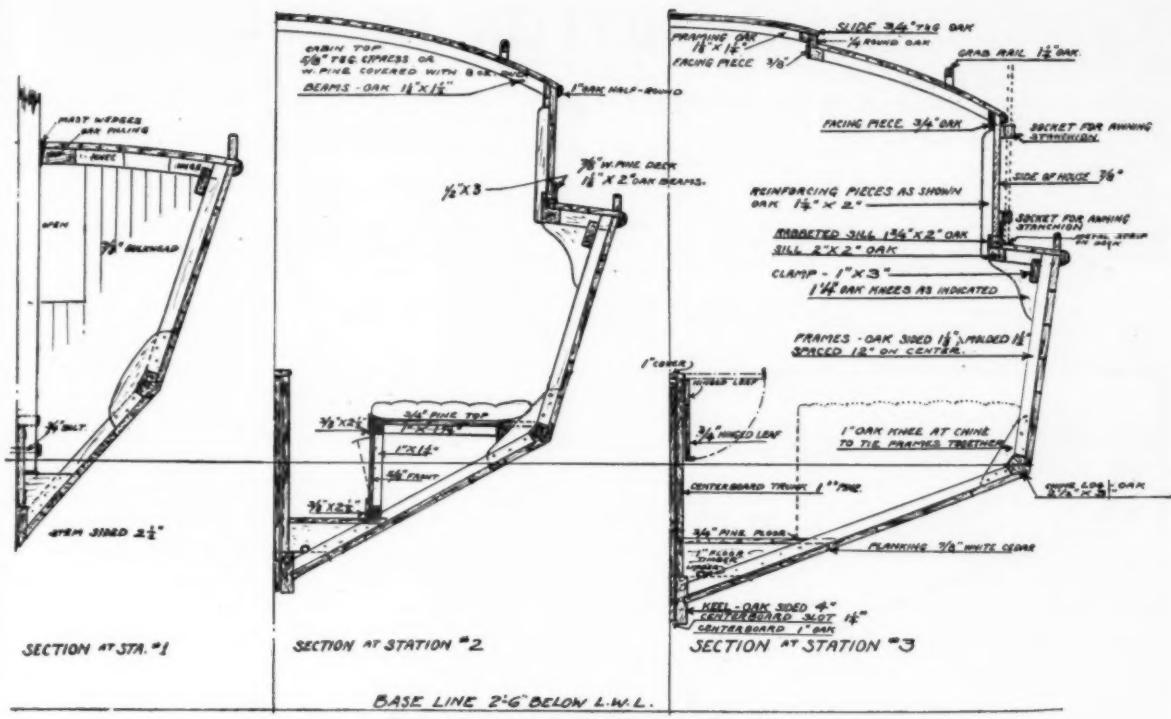


place. Trunk casing to be of 1-inch white pine boards about 8 inches wide fastened to posts with brass screws with heads countersunk and wood plugged. Lower board to be fitted to keel with 5/16-inch birch dowels carefully fitted, seam laid with light thread of yacht cotton and white lead. Seams to be caulked and payed and filled with white lead putty. Cap or cover to be 1-inch oak.

Centerboard: To be 1-inch oak with opening cut in lower aft corner 6 inches x 9 inches which is to be filled flush with lead for weighting the board down. Board to be hung on 3/4-inch diameter brass or bronze bolt located just above level of inner side of plank at keel, bolt to pass thru brass bushings in board and to have washer under head of bolt and nuts and washer on other side of keel. Centerboard to be raised and lowered by 1/2-inch diameter manila rope spliced to eye bolt in centerboard, rope passing up thru hole in casing cap over galvanized centerboard block and made fast to 4 1/2-inch galvanized cleat on cap.

Stem: To be sided 2 1/2 inches, molded as per plan, beveled to face 3/4 inches and to be bound by brass half-round fastened with brass screws; to be beveled to continue lines of planking at stem. To be reinforced by 2 1/2-inch oak apron secured to stem and to keel by 3/8-inch diameter galvanized rivets as indicated.

Stern Post: To be white oak sided 4 inches at center line of shaft and tapered and reduced in siding as above mentioned under keel. To be well fastened to keel, etc., by 3/8-inch diameter galvanized rivets.



**Planking:** To be of white cedar to finish  $\frac{7}{8}$  inches thick, fastened with brass screws, heads countersunk and wood plugged. In all planks over 4 inches wide three fastenings to be used at each frame; in all others two fastenings to be used. Planking to be smoothed and seams caulked with yacht cotton, payed with paint, and filled flush with white lead putty or seam composition.

Transom: Frame around edges, across top, and on center line vertically to be 1-inch x 2-inch oak. Transom to be double planked with white pine or cypress or white cedar, each thickness  $\frac{3}{8}$  inches, seams of outer strakes to come in center of inner strakes. To be thoroughly fastened together. Heads of fastenings in outer strakes to be countersunk and wood plugged. On center a 1-inch oak knee to be riveted.

Frames: To be of white oak sided  $1\frac{1}{8}$  inches, molded  $1\frac{1}{2}$  inches, spaced 12 inches on centers, except as required otherwise as noted on plan, frames to be straight and well fastened to floor timbers secured to keel and reinforced at chine be 1-inch oak piece.

**Floor Timbers:** To be oak sided 1 inch, molded as per plan. Flooring in cabin to be laid on floor timbers. Timbers 1-inch diameter to be bored in floor timbers as indicated, these to line up fore and aft in a line parallel with the keel. All floor timbers wherever possible to cross keel and be fastened to same by  $\frac{3}{8}$ -inch diameter galvanized drift bolt. In way of center-board where floor timbers cannot cross keel care is to be taken that floor timbers are securely riveted to frames and both well fastened to keel.

**Sheer Clamp:** To be yellow pine, fir, spruce, or other suitable

wood 1 inch x 3 inches to be in one length each side of boat, to be well riveted to 1½-inch oak breasthook at bow and clamp to be fastened to frames by galvanized rivet and boat nail at each frame, rivet above nail on the first frame, below it on the second, above it on the third, etc. (staggered).

Chine Log: To be of yellow pine, oak, or fir  $2\frac{1}{2}$  inches x 3 inches. White oak is preferable for this member. Log to be rabbeted for planking, beveled square with frame edges, steam bent and fitted into place, secured by knee at each end. To be riveted thru each frame reinforcing piece by  $\frac{3}{8}$ -inch diameter galvanized rod.

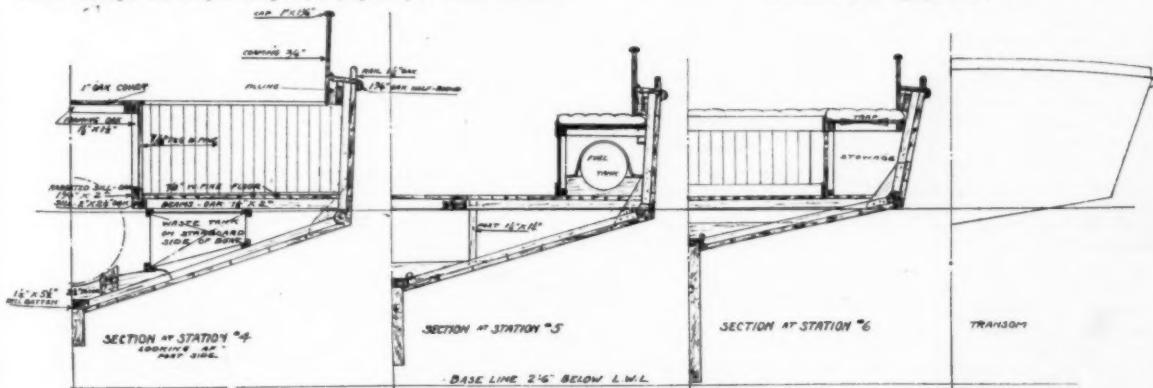
**Cabin Floor:** To be  $\frac{3}{4}$ -inch white or yellow pine, cypress, or fir laid with loose boards in center for access to bilge.

**Engine Foundations:** Engine bed logs to be oak 3-inch sided, molded as per plan, riveted to  $2\frac{1}{2}$ -inch oak floor timbers fastened to keel by  $\frac{3}{4}$ -inch diameter galvanized drift bolts. Care to be taken to provide bed logs as long as possible and to fit and fasten the whole together well to prevent vibration. Limbers to be cut in all floor timbers.

Keel Batten: Aft of the centerboard trunk an oak keel batten  $1\frac{1}{4}$  inches x  $5\frac{1}{2}$  inches is to be fitted and fastened as shown. Aft of stern post a similar piece to be fitted under keel batten as indicated, this under piece to be  $1\frac{1}{4}$  inches x  $2\frac{1}{2}$  inches wide.

Mast Step: To be of oak  $1\frac{1}{4}$  inches thick, molded as per plan. To be well fastened by drift bolts to floor timbers. Mast to be cut at heel to fit over step and to be fastened by  $\frac{3}{4}$ -inch diameter galvanized bolt with washers under head and nuts.

**Deck Beams:** To be of white oak sided  $1\frac{1}{8}$  inches, molded 2  
(Continued on page 120)



### *After construction sections for Porpoise*

# SMALL MOTOR BOATS

## Their Care, Construction, and Equipment

A Monthly Prize Contest Conducted by Motor Boatmen

Questions Submitted for the May Prize Contest

1. Why do you consider motor boating the best and cheapest of all sports? Give your reasons why motor boating should be more popular and why more people should own motor boats.

(Suggested by J. S. R., Mt. Vernon, N. Y.)

2. Give an itemized list of tools and spare parts for the average four cycle engine, reverse gear and accessories to be kept on board. What arrangement is best for storing them?

(Suggested by H. H. P., Oakland, Calif.)

3. Explain and illustrate a satisfactory method of ceiling the cabin of a cruiser so as to allow ventilation between the frames.

(Suggested by W. B. M., Newburgh, N. Y.)

### Rules for the Prize Contest

ANSWERS to the above questions for the May issue, addressed to the Editor of *MoToR BOATING*, 119 West 40th St., New York, must be in our hands on or before March 25, (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the senders' names and addresses.

The name will be withheld and initials used.

QUESTIONS for the next contest must reach us on or before March 25. The Editor reserves the right to make such changes and corrections in the accepted answers as he may deem necessary.

The prizes are: For each of the best answers to the questions below, any article or articles sold by an advertiser advertising in the current issue of *MoToR BOATING* of which the advertised price does not exceed \$25, or a credit of \$25 on any article which sells for more than

that amount. There are three prizes—one for each question—but a contestant need send in an answer to only one if he does not care to answer all.

For answers which we print that do not win a prize we pay space rates.

For each of the questions selected for use in the following month's contest, any article or articles sold by an advertiser advertising in this issue of *MoToR BOATING* of which the advertised price does not exceed \$5, or a credit of \$5 on any article which sells for more than that amount.

All details connected with the ordering of the prizes selected by the winners must be handled by us. The winners should be particular to specify from which advertisers they desire to have their prizes ordered.

## Keeping Clear of the Dinghy

Several Interesting Solutions to the Troublesome Dinghy Problem Which Will Effectively Prevent Conflict Between the Small Boat and Its Parent

Answers to the Following Question Published in the February Issue:

"When at anchor how do you keep your dinghy which is tied astern from coming alongside and banging the topsides when the wind or current happens to be unfavorable?"

### Keeps Dinghy Alongside

(The Prize-Winning Answer)

THE problem of the dinghy and the motor boat at anchor when the wind and tide are unfavorable has been a troublesome one. No doubt there are several methods of eliminating some of the difficulties.

The general method used on large yachts is the use of a boat boom projecting from the side of the yacht supported and stayed with wire rope; the boom being eight or more inches in diameter and strong enough to take the pull of good sized tenders and also the weight of the sailors who walk on it to get to the tender.

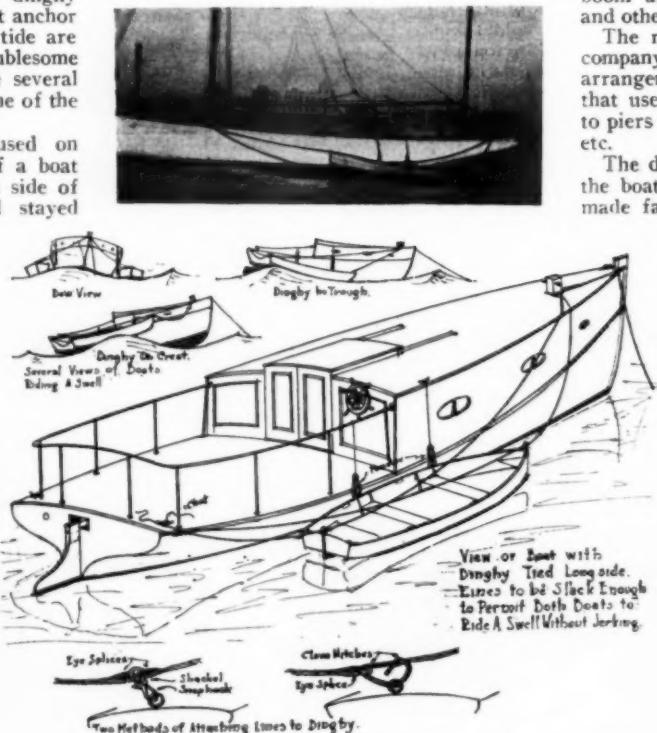
But the use of a boat boom is not the solution of this problem in the case of the small boat, because as a rule the freeboard is not sufficient to keep the boom high enough above the water to prevent the end from striking the dinghy at times when the boat rolls. A boom requires a certain amount of slack in the painter, say about five feet, together with the length of the dinghy about twelve feet and

two feet to the side of the boat, this would require the boom to project nineteen feet from the side of the boat. Then a mast is necessary to take the topping lift to support the boom and all sorts of guy wires and other rigging.

The methods shown on the accompanying sketches show a good arrangement which is similar to that used in making steamers fast to piers or tow boats fast to barges, etc.

The dinghy is brought alongside the boat about midships, a line is made fast to the sampson post or cleat in the bow, then to the bow of the dinghy and from there to a cleat in the stern of the larger boat. Now another line is also made fast to the bow of the larger boat, then to the stern of the dinghy and then to the stern of the larger boat. There should be a bit of slack in both lines so as to permit both boats to ride a swell without pulling each other too much. The amount of slack is a matter to be determined with a bit of experience.

Two thick rope fenders about four inches in diameter and about two feet long should be hung between the boats where they will do the most good. It is impor-



Photograph and diagram illustrating the method of A. G. W. in keeping the dinghy clear of its parent boat

tant that they be long so as to allow the boats to ride a bit without lifting the fenders into the dinghy. Unfortunately it is difficult to buy long fenders, so a few words on making them yourself will not be out of place.

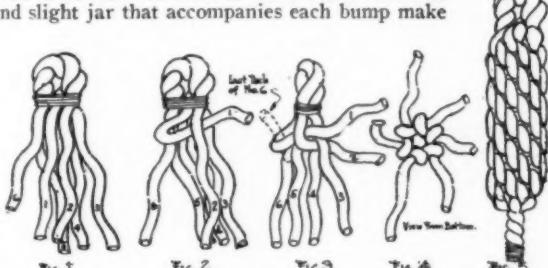
A good fender can be made of old anchor rope which has given good service and is no longer to be depended on for anchoring. Do not use cotton rope; it would be a waste of time and effort.

Take a rope three-quarters of an inch in diameter and twenty feet long; this will make one about two feet long. Serve the three strands at each end; then form an eye in the center of the rope; bind the two parts together so as to hold the eye; then unravel both ends to the binding of the eye (Fig. 1); now hang the rope on something high so the eye is about the level of your chin, so as to make it convenient to handle the strands; then take strand one in the left hand; pass under strand two, forming a loop (Fig. 2); now take strand two; pass under one and three (Fig. 3), and so on until strand six is tucked in to the loop first formed with strand one; then pull all strands snug so that looking from the bottom it will look like Fig. 4. Continue the same operation, pulling the strands snug before starting another circle. When near the end dispose of one strand at a time by tucking it up through the hollow in the center of the fender, using three circles to do this. Now make one ring of the remaining strands; then form into a rope again and serve the end, or all the strands may be tucked into the fender, making a blunt end.

A. G. W., College Point, N. Y.

### Dinghy Should Swing With Cruiser

THE continual, or worse still, the intermittent bumping of a dinghy which persists in coming alongside an anchored cruiser is one of the most annoying little difficulties that may mar an otherwise perfect cruise; for even if no harm is done to either boat the noise and slight jar that accompanies each bump make

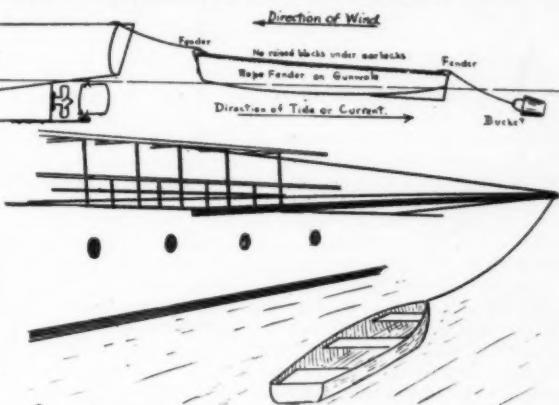


Method of making suitable fenders from lengths of old line as proposed by A. G. W.

sleep out of the question. This trouble may occur in two ways: through anchoring on a still night in a place protected from both wind and current when the small boat will persist in lying close alongside and gently scratching her gunwale against the topsides of the cruiser; or through anchoring in a strong tide or current with a moderate breeze blowing in the opposite direction with conditions such that the cruiser swings head to tide and the lighter draft dinghy either swings alongside head to wind and bangs noisily into the topsides of the larger boat with each wave that comes along, or worse still, swings out astern but at each strong gust of wind sails ahead enough to bump heavily into her consort.

The slight rubbing of a dinghy alongside a cruiser on a calm night can be made harmless and silent by simply fitting the small boat with fenders at the bow and at each side of the transom and by fastening a rope fender all the way around the gunwale. The fenders for the bow and transom had best be bought from a dealer in marine hardware and the rope fender consists merely of a piece of cotton rope fastened to the gunwale. This equipment will not, however, prevent annoyance from the dinghy when the wind and tide cause the second set of conditions mentioned above and the small boat is driven forcibly against the cruiser's topsides. To prevent this the dinghy must be made to swing with the tide as the cruiser does, which can be most readily accomplished by putting over either a canvas or metal bucket as a drag from the stern of the dinghy to increase the hold of the current on her. The only possible trouble with this scheme is that the wind may increase enough to make the

cruiser swing head to it while the bucket will cause the dinghy to swing alongside head to tide. This can be remedied by taking in the bucket drag and letting both boats swing with the wind. The writer will add that in a number of years of experience with this scheme of making a dinghy swing clear of the cruiser it has only once or twice been necessary to get up at night and take in the drag. A word of caution about remembering to take in the drag before getting under way will not be out of place. The resistance of a three-gallon bucket will cut down the speed of even a powerful fifty-foot cruiser in a most amazing way if she



A drag bucket will help the dinghy to stay in position writes W. M. A. A boat boom is only suitable for large boats

does not free herself of the incumbrance by pulling the handle off the bucket or forcing its bottom out.

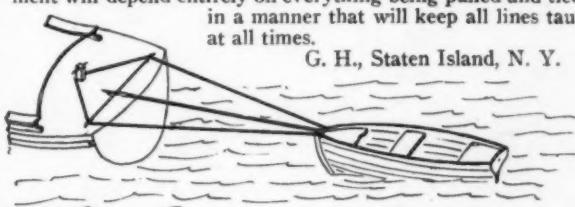
A large cruiser, of the type popularly known as a yacht, can be readily equipped with a boat boom as shown. This device is not suited to the average motor cruiser, however, as it is worse than useless if not long enough to permit the tender to swing in any direction without fouling the big boat.

W. M. A., Philadelphia, Pa.

### Uses a Boat Hook

IN the following description it is assumed that the boat in question is not provided with a regular boat boom, which we all know is the best manner in which to keep the dinghy at its proper distance and out of harm's way; and with the wind or current becoming contrary, I would proceed to rig up an emergency boom, using the boat hook and the boat's bow-line for the guys. The lines should be arranged in such a manner so that two ends lead to the dinghy from port and starboard sides, and be long enough to reach the end of boat hook, being securely tied to end of boat hook and to dinghy. The other end of boat hook resting on the after deck and fastened by a cross line, to hold the end in a central position on the deck. By this arrangement the boat hook is held in a rigid position, it being impossible for it to move, only in an upward or downward direction at the end resting on bow on dinghy, the side thrusts being taken up by the guy lines. As a protection to the deck it is advisable to lay a bumper or flat board under the end of boat hook resting on the deck. Also if available a T pipe fitting may be slipped on handle of boat hook, through which the line may be passed instead of tying at handle, care being taken so that no sharp edges are present which might saw through the line. The method of tying must be left to the individual case; but in all cases, however, do not allow any slack lines anywhere, as the success of the entire arrangement will depend entirely on everything being pulled and tied in a manner that will keep all lines taut at all times.

G. H., Staten Island, N. Y.



A boat hook properly secured is the favorite with G. H.

# Storm-proof Cockpit Curtains

## Arrangement of Material and Construction Methods for Thoroughly Excluding the Weather by Means of Canvas Curtains

Answers to the Following Question Published in the February Issue:

*"Describe and illustrate a storm-proof arrangement of drop side curtains for the cockpit of a moderate sized raised deck cruiser showing method of fastening to deck and gunwales, also method of fastening when furled up?"*

### Canvas for Side Curtains

(The Prize-Winning Answer)

**A**n arrangement of drop side curtains which has proven very satisfactory in the heaviest of rain storms is shown in the accompanying drawing. The canvas should be of about 8- or 10-oz. material, shrunk with water before cutting the curtains to fit. The method of fastening to the wood edging of the awning is by means of screw eyes, through awning grommets in the canvas. This method is superior to tacking as it allows the curtains to be readily and quickly removed when storing the boat for the winter. When lowered, the bottom of the curtains are fastened over awning lugs and a small copper pin inserted in the hole in each lug. These lugs, which are galvanized, are the kind commonly used for hinging window awning frames. The pins which are solid and not of the split cotter pin type can easily be made by hand from  $1/16$ -inch diameter copper wire. A short length of heavy linen thread is tied to the pin and sewed to the curtains about two inches above each grommet, rendering the pin always accessible for insertion in the awning lug. If desired, the regular curtain fastener may be used instead of the lug and pin. This type is commonly used on automobile curtains and operates by turning a movable oval head through  $90^\circ$ , over an oval grommet.

For holding curtains in place when furled, a light cotton rope is loosely strung from screw eyes as shown in the drawing. This rope is brought up underneath the rolled curtain and slipped over a hook located intermediately between the

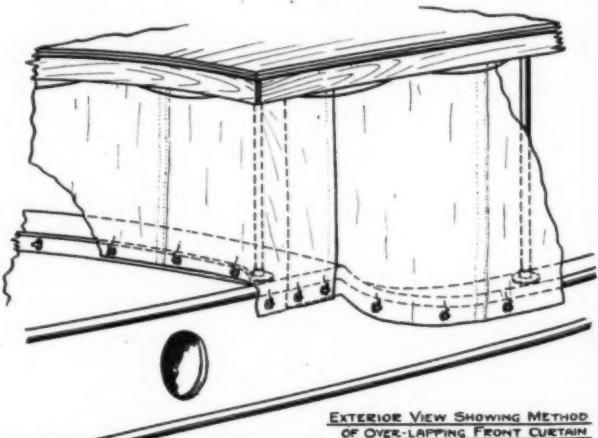
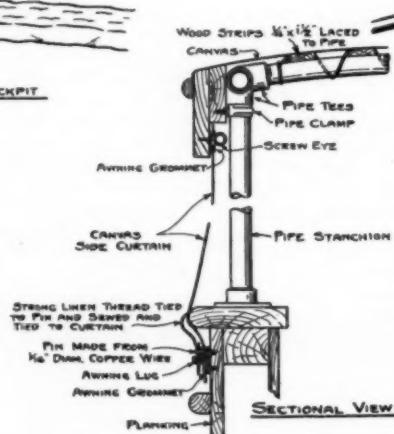
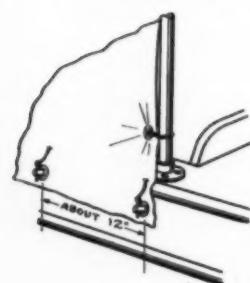
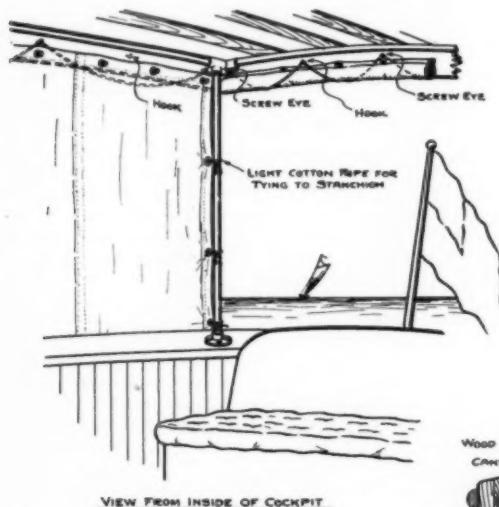
screw eyes. In this case, the screw eyes need not be spaced any closer than two feet apart.

The front and side curtains will have to be overlapped as shown as the boat is usually headed into a storm. In the back, the curtains can be tied closely together to the stanchions. In most cases, the rear curtain can be kept up without having rain enter the cockpit.

H. A. M., Philadelphia, Pa.

### Side Curtains for Cruiser

No attempt has here been made to describe or illustrate the whole drop side curtain layout, but certain essential details of the construction are shown. In the first place, it has always been found unsatisfactory to hook the curtains direct to deck or coaming, without means for taking up the slack; canvas will stretch when wet and shrink when drying out and the curtains will never be adjusted just right. About the simplest and strongest way is to put a set of brass grommet rings along the lower edge of the curtain and run a light line, say a quarter-inch manila rope, through the rings, having it fast in the first one. Thus a series of loops is formed which are hooked over or run through a set of hooks or rings set into gunwale, coaming or deck. For a vertical surface like the gunwale or coaming, hooks should always be used, unless there was danger that the canvas would slack up to the extent that the lashing would fall out of the hooks. In this way the line is always kept reeved through the lower edge of the curtain and when fastening,



A satisfactory curtain arrangement such as is used by H. A. M.

the loops are merely placed under the hooks, drawing the line taut at each one, until the last grommet is reached, where the line is made fast. Then if the curtain needs to be tightened or slackened off, the end of the line only is loosened and readjusted.

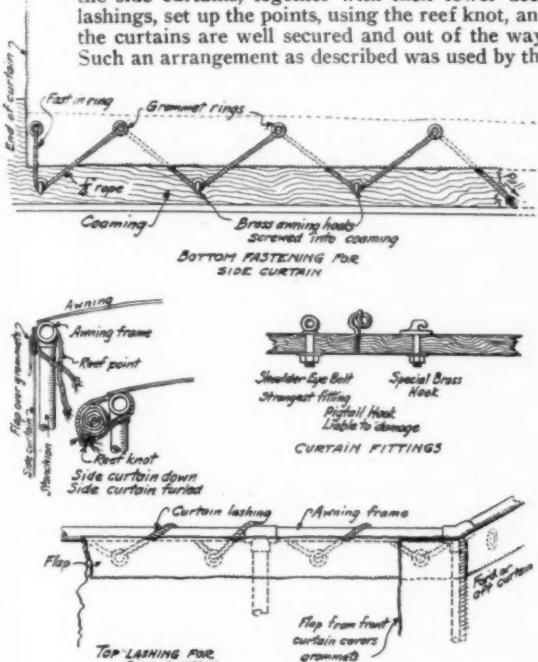
For deck fastenings, the same arrangement is used, but here the fittings must be extremely substantial. Brass eyes, pigtail hooks and such will surely be stepped on, kicked and otherwise rendered unfit for use in a short time and unless the boat owner is up in pattern making and can have substantial bronze deck hooks cast to order the conventional brass or galvanized shoulder eye bolt will be best, especially if put through the deck and set up underneath with washer and nut. With this

arrangement the line must be reeved through each time, but this will not be such a great disadvantage and the line can never come loose.

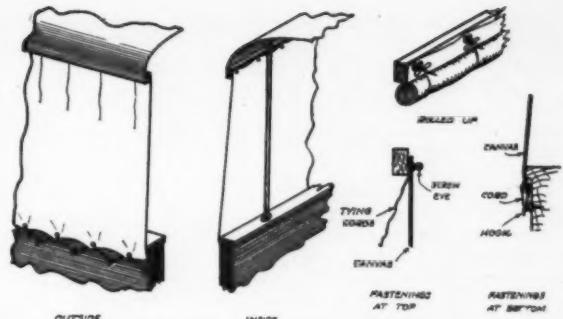
The upper edge of the side curtain may also be provided with grommets and a line lashed through them and around the awning frame. To prevent water beating in through the holes, a flap is run along the upper edge and stitched at the top only; this will cover the grommets, the flap being on the outside, and the line can be threaded through slits in the upper seam. If the top awning has a flap, this should extend down outside of the side curtains. The end curtains would be fastened in the same way, flaps on the vertical edges folded around the sides and buttoned or lashed would keep the water from working in at the corners.

The simplest way to fasten the side curtains when furled is to provide a series of short lengths of line, similar to "reef points," along the upper awning frame. Then roll up

the side curtains, together with their lower deck lashings, set up the points, using the reef knot, and the curtains are well secured and out of the way. Such an arrangement as described was used by the



Practical methods of fastening and securing side curtains as suggested by H. H. P.



Screw eyes and tying cords simplify the furling of L. R. K.'s curtains

writer for several years on a twenty-eight raised deck cruiser with perfect satisfaction and with no patented or flimsy or complicated fittings to break or get out of order just when most needed. H. H. P., Oakland, Calif.

### Storm-proof Side Curtains

**A**S SATISFACTORY and storm-proof arrangement for drop side curtains is illustrated herewith. The curtains are made of canvas with a hem top and bottom, and grommets spaced equally along both these edges. The top edge of the curtain is fastened to the permanent top frame by brass screw eyes through these grommets, and supported by the screw eyes, are short cords hanging down outside.

A cord is laced through the bottom row of grommets, and when the curtains are down the cord between the grommets is slipped down over hooks in the hull, located a little below the bottom edge of the curtain. Pulling one end of the cord tight, and fastening it, will draw the entire curtain tight, and hold it firmly.

The row of hooks in the planking are of the heavy cast brass type, specially made for such purposes, but of course others can be used.

When the curtains are rolled up, the tie cord that hangs down outside is pulled in, passed through the screw eye, drawn tight and tied. When it is desired to remove the curtains completely from the boat, it is only necessary to remove the screw eyes.

If it is necessary to make the side curtains in several sections the vertical lap joint should be about six inches, and with the outside opening aft, so that it will not blow open when heading into the wind.

L. R. K., Philadelphia, Pa.

## How to Refloat Your Boat

### Advice on Getting Back Into the Water in the Event of Being Stranded Above High Water Mark

Answers to the Following Question Published in the February Issue:

"Suppose your boat parts her cable and is driven ashore in a blow, being left on a beach above highest normal tides, but undamaged. How would you proceed to get her afloat?"

### Rollers and Skids the Best

(The Prize-Winning Answer)

**B**RINGING a boat back to the water after it has been cast up beyond ordinary high water mark through the action of storms or otherwise is really not a difficult undertaking provided the boat is not damaged.

In the event that the stranded boat is a light V-bottom (not over 1½-2 tons) the best method for refloating is as follows: Four long planks and three 2- or 3-inch rollers are first procured. The boat is left canted on one side, that is resting on keel and chine, and two of the planks are laid parallel with the hull. Two pry bars (4" x 4" or 5" timbers, about ten feet long, slightly pointed on one end), and some short blocks to act as fulcrums are used to raise each end of the boat enough to place rollers under the hull; rollers should

be long enough to roll on both planks. The boat can then be moved easily and continuously on the planks by using short pinch bars or floor chisels on the under side of the rollers similar to using a car mover.

Should the boat be in such a position that it is necessary to turn it around in order to get the bow toward the water, it can be brought about by canting the rollers, that is placing them at varying angles with the keel. In fact by placing roller at bow at opposite angle to roller at stern the boat will turn on practically a fixed pivot.

It is well to state that boats should be moved down to, or as much beyond low water mark as practical so that every natural advantage can be utilized. When boat to be moved on rollers is properly faced it simplifies matters exceedingly if a heavy anchor can be set out from the bow with plenty of cable bent on to it; a tackle block, chain hoist or pulling

device between deck cleat and end of cable facilitates moving of boat considerably. On cruisers, etc., the deck windlass would of course be used for this purpose.

Should the boat prove to be too heavy for the pry bars or there is a lack of husky help, screw jacks can be used to raise boat. These can be dug in under the keel at bow and stern, it being necessary to place a wide block under the jack to prevent sinking.

When moving the larger boats the first requirement is that the boat be placed on an even keel and propped up; in fact props should be lashed to upper structure of boat to prevent it from going over; the boat then should be blocked up, using the screw jacks, digging the jacks in if necessary and using old railroad ties or similar timbers for blocking. Three heavy planks are laid under the elevated hull, three or more rollers properly set on the planks and the boat's cradle or an improvised similar timber platform placed on the rollers.

Boat is then lowered to cradle and it can then be moved by the method previously described.

Should the boat be on hard even ground, use greased skids, about  $4 \times 4$ -inch long timbers planed smooth on one side and liberally smeared with cup grease, laid directly under the keel and boat moved without much effort. This method of moving by sliding on greased timbers is simplicity itself and is exactly the principle used in launching very large ships in boat yards.

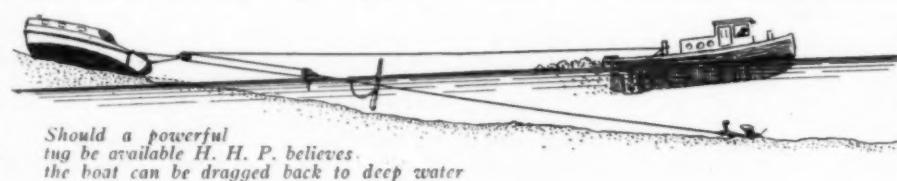
Tackle blocks or hoists pulling on bow and stern lines from anchors or fixed objects or several pry bars pushing, or both pulling and pushing devices operating at one time, will move even the forty-five-footers endwise or sidewise as desired. In using skids, should the boat being moved be of the flat bottom or wide, short-curved bilge shallow draft type, propping up can be dispensed with if distance to be covered be not too great.

F. A. K., New York, N. Y.

### Floating Stranded Boat

**A** SMALL boat driven on the beach above normal high tide level can often be shoved back into the water through the efforts of four to six men, especially if the sand is shoveled away between boat and water to cause it to sink down as well as slide forward through its own weight. A muddy beach is usually much more slippery than sand, but at the same time it is difficult or impossible to gain a foothold to push against.

A larger boat, say from thirty feet up, when driven high up is a difficult proposition to refloat. The sketch suggests one method which should require but little explanation. The idea is to drag it bodily into the water through the means of a block and fall anchored to the bottom well out from shore, with the running line attached to the bits of a tow-boat. If possible to issue a few shovels to those interested bystanders who still linger after this fatiguing equipment appears, the process will be considerably accelerated by shoveling the sand away between boat



Should a powerful tug be available H. H. P. believes the boat can be dragged back to deep water

and water's edge as mentioned above. This would be rather unsatisfactory in the case of a soft mud beach and would probably be unnecessary.

Should the stranded boat be equipped with heavy sammson posts, the block and fall might be attached direct, though in any event the safest course would be to run a heavy rope entirely around the hull, attaching cross lines where needed to hold the other in place, then pull the boat into the water without danger of damaging the hull. The anchor is carried as far out from the beach as possible and the inner end of the line, where the block is attached, is fastened to a float or buoy to prevent its getting lost.

The towboat of course does not have to be a regular tugboat, but should be one having a heavy duty slow speed engine and proportionately large diameter wheel, so as to give a good pull. A powerful boat might be able to pull off a small stranded boat without the use of the tackle, and on the other hand a low-powered towboat, through the agency

of a multiple block and long haul, could also perform the work, though it would take longer. Whether the boat was pulled straight off or at an angle would depend upon circumstances, such as whether it had been beached broadside on, or with bow or stern pointing toward the water.

H. H. P.,  
Oakland, Calif.

### To Launch a Beached Boat

**I**N order to get your boat afloat after it has been beached

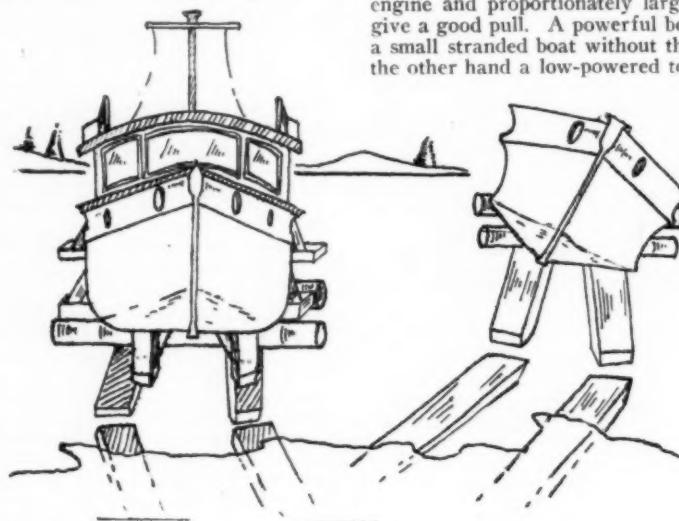
by a heavy blow you will need about five helpers, of course the more, the better.

All the equipment that will be necessary will be a few planks. Procure four about  $2 \times 12$  and of any moderate length. Lay these down on each side of the boat end to end and running parallel to it as close as is convenient. Now get several rollers long enough to reach from one side of the boat to the other and about six inches in diameter. These rollers do not need to be absolutely true, so any log that is fairly round will do provided the bark is skinned off.

The scheme is this, the planks will act as a runway for the rollers and the rollers will carry the boat down, the beach is apt to be inclined and the boat will roll down without any trouble, or, if the beach is level only a slight amount of effort will push the boat down.

In order to slide the rollers under, it will be necessary to pry the boat up. The helpers will be needed to balance the boat after she is up on the rollers. Two on each side can do the trick as all that is necessary is to keep the boat upright and they will not have to do any great amount of lifting. It is very difficult to stop a boat from sliding down, once it is on the rollers. It is apt to slide down and off the rollers and then you have to lift it all up again. In order to insure control of the boat a sand anchor should be put in and a rope from the bow passed thru a loop in a rope attached to the sand anchor. It should then come back to the boat where a person can pull on it and use it as a snubber if the boat gets unwieldy.

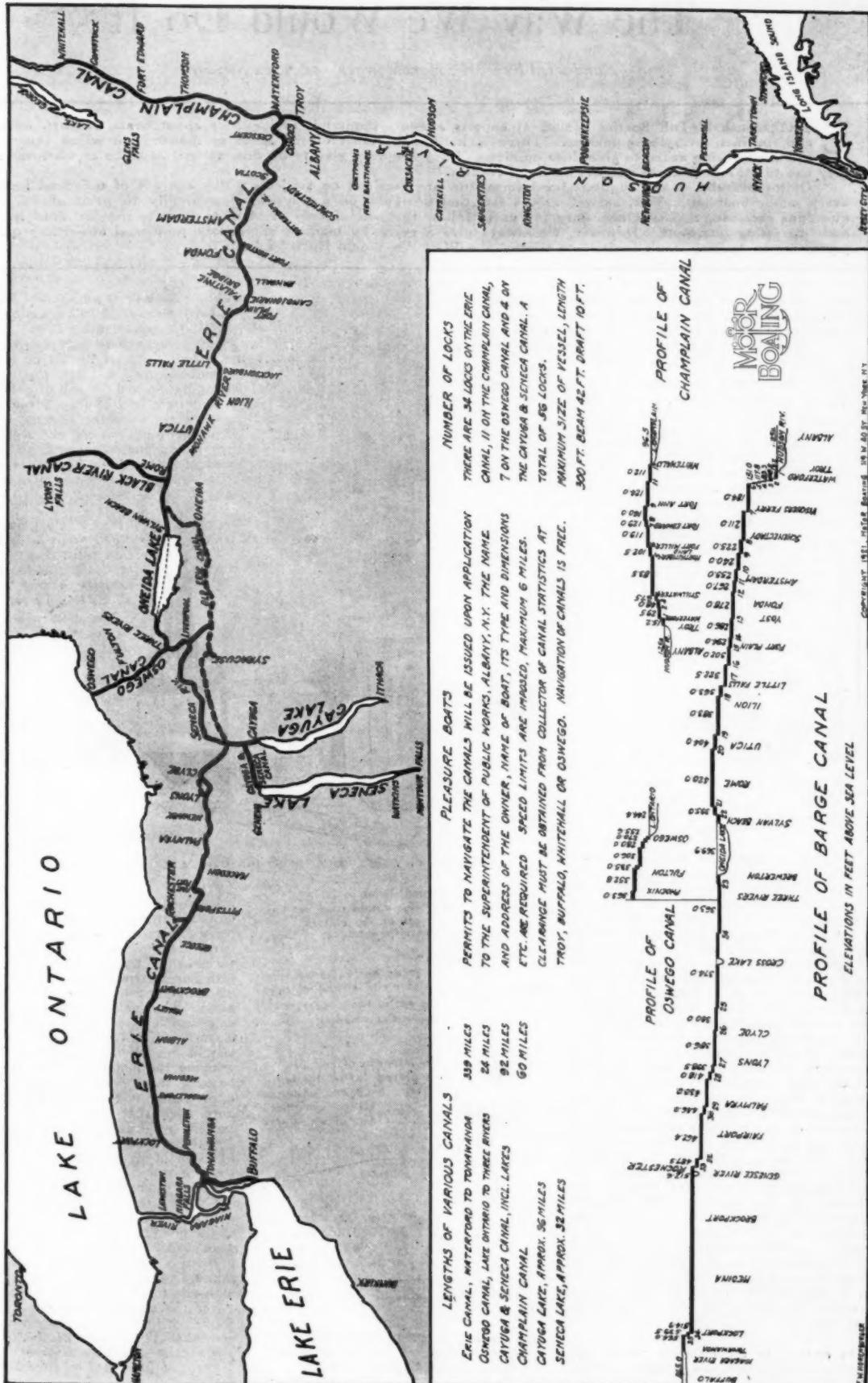
A sand anchor can be made of two planks spiked together at right angles and a rope tied around the intersection. This should be buried about (Cont. p. 62)



Rollers on smooth planks or greased skids the simplest according to F. A. K.

Motor Boatman's Chart No. 17—The New York State Barge Canal System

For Greater Detail See U. S. Lake Survey Charts, Catalog Nos. 181 to 187 Inclusive



# The Way We Would Do It

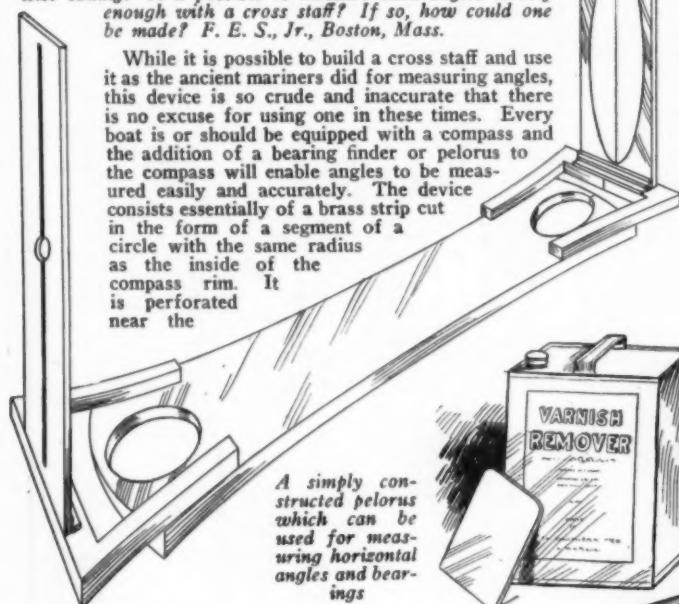
Conducted by F. W. Horenburger and A. E. Snyder

EVERY month MoToR BoatinG's staff of experts answers thousands of inquiries about boats, engines, accessories and, in fact, everything marine. There is hardly a branch of the sport or industry on which they are not constantly being asked to give their opinions. They are very glad to do this, as well as to be of whatever service they can to MoToR BoatinG's subscribers and readers.

Quite naturally, many requests for information are received on subjects which are not of universal interest to every motor boatman. This, as well as the fact that it would be a physical impossibility to print answers to all questions received, makes it necessary for us to follow the rule of only printing answers to the few most important and interesting questions. However, we always give a reply by mail, so if you are perplexed about any questions pertaining to boating don't hesitate to write "The Way We Would Do It" Editor.

*In the absence of a sextant I am unable to measure horizontal angles for the determination of a position in coastwise sailing. Is it possible to measure such angles closely enough with a cross staff? If so, how could one be made? F. E. S., Jr., Boston, Mass.*

While it is possible to build a cross staff and use it as the ancient mariners did for measuring angles, this device is so crude and inaccurate that there is no excuse for using one in these times. Every boat is or should be equipped with a compass and the addition of a bearing finder or pelorus to the compass will enable angles to be measured easily and accurately. The device consists essentially of a brass strip cut in the form of a segment of a circle with the same radius as the inside of the compass rim. It is perforated near the



*A simply constructed pelorus which can be used for measuring horizontal angles and bearings*

ends with a large hole about as shown. Another piece of brass is fashioned to rest on top of the first piece so as to continue the device beyond the edge of the compass. Vertical members are next cut as shown, one with a small peep hole and a vertical slot and the other with a larger hole of any convenient shape. These are hinged to the lower member and the device can be assembled and screw fastened or brazed as is most convenient. It is essential that the vertical members are perpendicular to the horizontal piece. A cross hair consisting of a fine silk cord can be attached by means of small screws and continued on the under side of the horizontal piece so as to bisect the openings. In use the device is placed on the compass and a diameter of the compass circle must exactly line up with the peep hole and cross hair. In taking a bearing the observed object is viewed through the device and its compass bearing noted through the opening in the bottom. The compass course of the boat must be noted and held steadily while observations are being made. A series of bearings can be plotted on the chart and an absolute fix obtained. Dimensions of the various parts will have to be determined to suit the size of the compass to which the device is to be attached.

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*In answer to my question which was published last month, you mention that the*

*proper way to secure the end of a line is by needle whipping. Will you be good enough to tell me how this can be done? M. B. S., Vermilion, Ohio.*

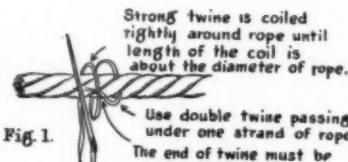
Needle whipping is applied to the end of a line by wrapping a number of turns of marlin or heavy twine around the end and securing it. It is started from the inboard end and wound toward the end of the rope. The turns are all pulled tight and binding turns are put in the lay of the rope as shown in the sketch. If the binding is started from the outboard end and worked in, the last binding turn would come outboard and the whole thing would soon come loose. The binding is finished by bringing the twine through the center of a strand and cutting it off smooth.

*An oak deckhouse on a boat which I have recently purchased is badly stained and needs to be refinished. Can you tell me the best way of doing this work in order to have a ship shape job? R. B. W., Tiverton, R. I.*

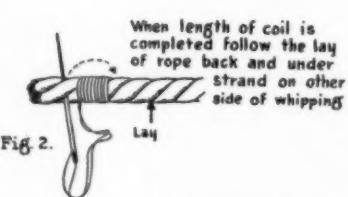
The first essential for a job of this kind is a sufficient supply of the tools and



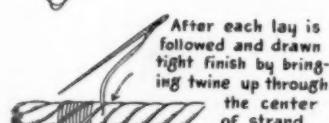
*In refinishing a boat's bright work the articles illustrated here are necessary.*



*Fig. 1.*



*Fig. 2.*



*Fig. 3.*

*Progressive illustrations showing the proper method of making a needle whipping*

materials necessary. There will be required varnish removers, bleaching materials, scrapers, sand paper, etc. The varnish removers are applied to the surfaces to be cleaned and after the old varnish has softened sufficiently it is scraped off and if necessary the process is repeated again. The surface is next gone over with steel cabinet scrapers and thoroughly cleaned. The corners of the scrapers should be slightly rounded to prevent gouging the material. The scrapers must be kept sharp with a square edge. This edge is slightly turned as it is the burr or wire edge that does the cutting. It is turned by drawing a hard steel punch across the scraper edge. Skill is required to secure a proper edge which will take a shaving and not simply dust the surface. Medium sand paper is used to smooth up the work after the scraper and all corners are cleaned out by means of a skewer such as the butcher uses. Should the wood be discolored or stained it will be necessary to apply a bleach consisting of a saturated solution of oxalic acid in water which is allowed to remain for several hours. After the material is clean, it should be washed with a strong vinegar in order to neutralize the acidity of the oxalic acid. The oxalic acid may also be dissolved in

*(Continued on page 62)*

# Build a Boat

MoToR BoatinG's Home Builders' Department Which Will Contain a Design of a Small Boat Each Month Which Can Be Easily Built at Home

## NO. 2—KINGFISHER, A FOURTEEN FOOT FISHING SKIFF

By C. E. Bradley

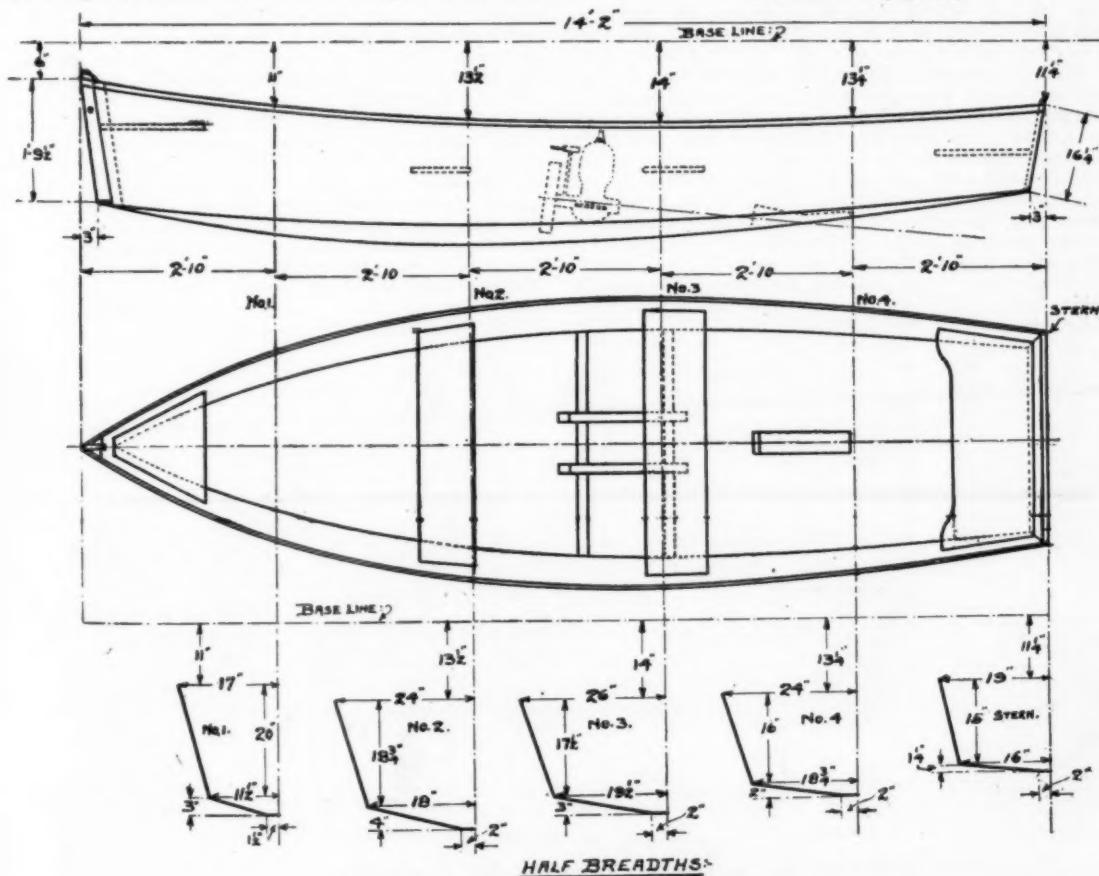
AN excellent little boat designed particularly for fishing and kindred purposes is presented this month. Kingfisher is just over 14 feet long and substantial enough to carry a small motor of from 2 to 3 h.p. quite handily. It will be a simple job to build this boat as dimensions of moulds are given in detail at each of four stations and at the transom. From these figures the moulds can be constructed and assembled in an inverted position and in the correct relation to the base line. The material can all be readily assembled and secured at most lumber yards. The stem piece can be cut out of a piece of oak of suitable size about 3 x 4 inches in section and 24 inches long. The center line for the stem is marked on the piece and all cutting must be done equally on both sides of the center line in order to preserve the symmetry. A half inch edge forward will be about right. The keel member can be a piece of oak or yellow pine about 1 inch by 4 inches in one length. It is reduced in width toward the bow sections. An apron piece is prepared to fit over the keel piece somewhat wider in order to hold the edges of the bottom boards securely. At the chine

two pieces about 1 x 2 inches are required and must be cut and shaped to fit the boat. In order to simplify the construction as much as possible the side planks are made in a single width and of about half inch thickness. Cedar or cypress will be the best material to use for these. Some trouble may be experienced in securing a single board of the necessary width but a little patience will probably bring some to light without much effort. Care must further be exercised in handling and working these planks so as to avoid splitting them. After being cut and fitted to the required shape the plank can be screw fastened to the stem and transom at the stern. The bottom boards are applied thwartships and fitted to the keel and chine pieces in the usual way. The thwarts are cut and fitted and screw fastened to the sides by means of small cleats.

They will serve to stiffen the boat and help to prevent the sides from spreading.

The installation of the motor can be undertaken next and a pair of thwartship floors are fitted about amidships. The engine bearers are put on over these spaced to meet the requirements of the

(Continued on page 62)



Plans of the fourteen foot fishing skiff Kingfisher

# New Models in Fast Boats

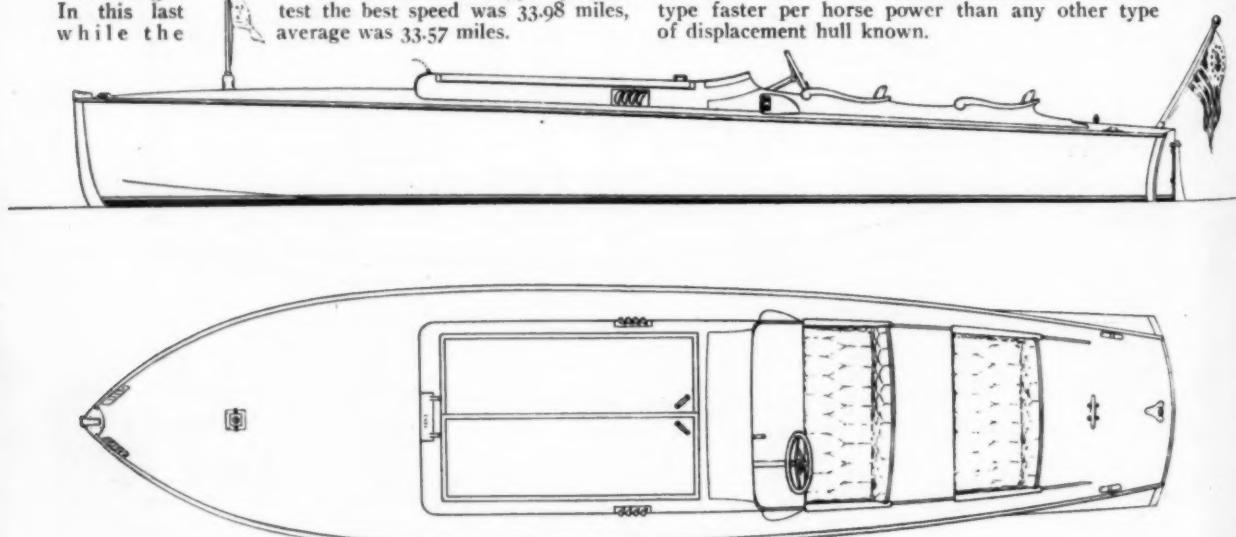
High Speed is Attained in Radically Different Types of Hull Designs of Remarkable Efficiency



*Remarkable results were obtained in speed tests of this little Hall-Scott powered Sea Sled*

**I**N order to test out some theories concerning the speed possibilities of a small 22-foot Sea Sled, some very careful trials were held over a nautical mile course in Boston Harbor, near Thompson's Island. The sea conditions were choppy on one end of the course. The boat was run without a top or wind shield. Fuel tanks were well filled and about 30 gallons of gasoline were carried during the tests. Two passengers were carried weighing about 365 pounds and the average weight, boat and passengers, was 4,200 pounds. The engine was one Hall-Scott, four-cylinder, model L. M. 4 marine engine of the single overhead valve type with bore and stroke of 5 x 7 inches. The average revolutions, 1,630. Four runs were made up and down this course with and against the tide. The best speed was 36.68 m.p.h. and the average speed for all was 35.92 m.p.h. Further tests with five passengers, of the boat and crew, 4,760 pounds, test the best speed was 33.98 miles, average was 33.57 miles.

**O**NE of the latest designs completed at the Albany Boat Works is the little boat of 26 feet length powered with a six-cylinder Hall-Scott motor shown below. This boat is to be used on Saranac Lake this summer and it is expected to develop a speed in excess of 40 m.p.h. This little sister of the Tarpon which was exhibited at the New York Motor Boat Show is equipped in a similar manner with the new invention of Elliott Gardner which makes it the fastest and most seaworthy type of speed boat known. The hull construction is to be exceedingly fine and the boat will be one of the prettiest mahogany speedsters ever seen. It will not only have the fastest known type of hull, but will also be a luxurious, easy riding boat. The exhaust is to be muffled and the outfit will be thoroughly quiet. The exhaust will be discharged under the boat so that there will be no visible discharge pipe. The new Gardner invention will make boats of this type faster per horse power than any other type of displacement hull known.



*One of the latest Hall-Scott powered runabout designs by the Albany Boat Corporation, embodying the new invention by Elliott Gardner*

# Our New President Goes Motor Boating

Cruising Down the Florida Coast, President Harding Enjoyed a Pleasant Vacation Preparatory to Taking Control of the Ship of State



Photographs by International



*President Harding journeyed down the Florida Coast on the houseboat Victoria enjoying a brief vacation before assuming his duties as chief executive of the nation. In sailing through the tortuous passages of the lower Indian River Victoria met with the usual adventures of the houseboat cruisers and several times ran on the natural obstructions and snags in the channel. President Harding was the guest of Senator Freylinghuysen, of New Jersey, while on board Victoria*

## The Submarine Chaser Club of America

An Organization Unique Among the Many Associations of Ex-Service Men which Have Developed Since the War

**M**OTOR boatmen will be interested to know that the officers and men of the famous Sub Chaser Force have formed an organization to perpetuate the traditions of a service unique in the history of the Navy. The Submarine Chaser Club of America is limited to those officers and men who were regularly attached to the 110-foot vessels of the Navy, known as the Sub Chasers, prior to the Armistice. The activities of this Club include the publication of *The Log*, which, has been running a year, now has a monthly circulation of three thousand copies, publishing stories, photographs and articles dealing with the work of the Sub Chasers during the war, together with current news of Sub Chaser men.

Steps have recently been taken to bring into closer relationship the activities of the U. S. Power Squadron, Inc., and the Sub Chaser veterans. The Power Squadrons teach practical motor boating. The membership of the Submarine Chaser Club is made up entirely of men who have experienced every aspect of motor boating, including many undertakings not attempted by the average motor boatman,

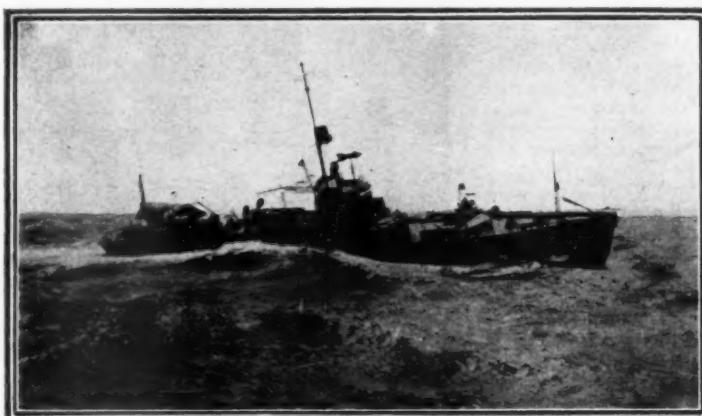
such as trans-atlantic passage in winter, circling North Cape into the White Sea, working in the North Sea mine fields and participating in the battle of Durazzo in the Adriatic. It is fitting that practical motor boatmen should cooperate for the best interests of the finest sport in the world. Therefore, it is hoped that many Sub Chaser men will join the

U. S. Power Squadrons and that Power Squadron members will give non boat-owning Sub Chaser men places in their crews, thereby augmenting the membership of the Power Squadrons and giving the Sub Chaser men an opportunity to participate in a sport at which in their ratings they excel.

It is interesting to notice that the Submarine Chaser Club has followed yacht club procedure in its organization. The flag of the Sub

Chaser Club may be seen in the near future on every body of water in the United States for there are fifteen thousand eligibles scattered over the country, every one a motor boatman in spirit.

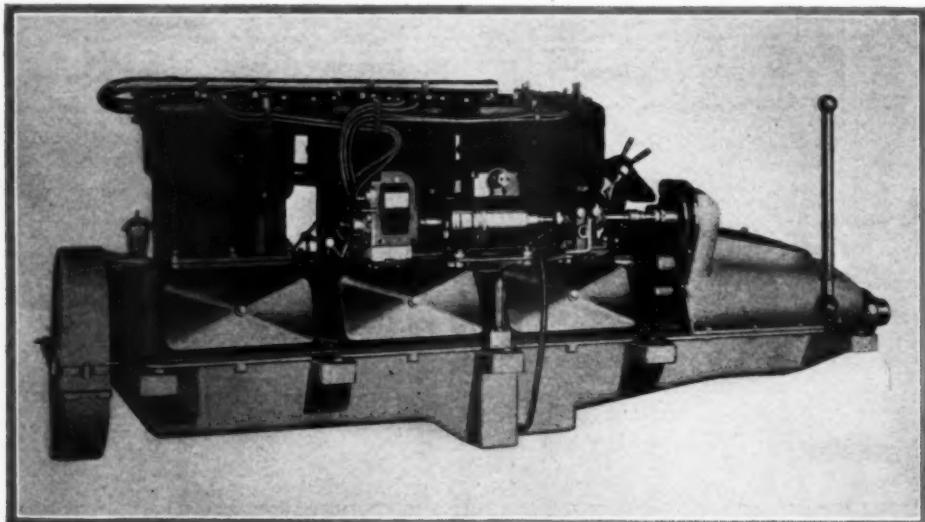
The headquarters of the Club are Room 1112, 29 Broadway, New York City.



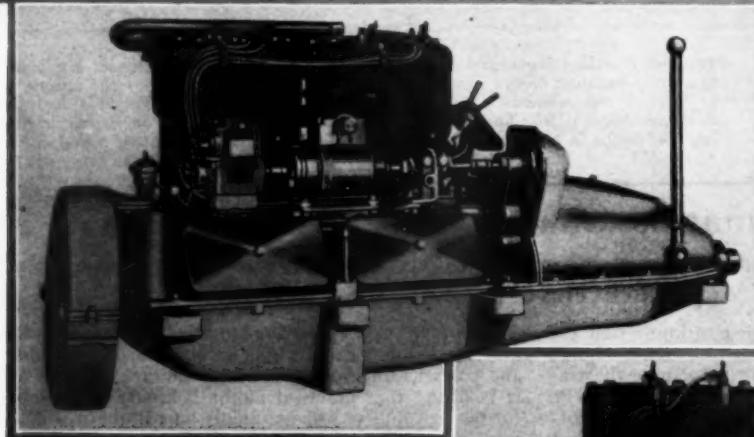
*This is the life say the subchaser crew*

# Confidence in Detroit

Contrary to the Popular Belief, Business in the Marine Divisions of Detroit's Industries is Booming



*The complete line of Scripps motors includes two, four and six-cylinder models, in both the medium duty and the high speed types. All moving parts are enclosed and particular attention has been paid to accessibility of parts requiring adjustment. Extreme care is used in the design and manufacture of all reciprocating parts resulting in unusually smooth operation.*

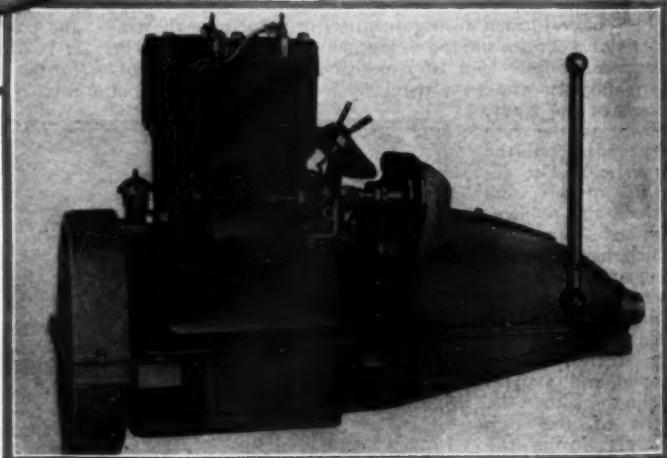


thusiasm for it, particularly among the new recruits, will carry it along in greater measure for many seasons to come.

The Scripps motors which are now being produced in large quantities are an established reality. Ever since you have owned a boat you have wanted a motor which fulfilled all your specifications. This ideal motor is now at hand. Power enough to propel your boat combined

**T**HE depression in the automobile industry which is noticeable about Detroit is far from being apparent in the marine engine plants. Every one intimately connected with the sport of motor boating knows that it performed an unquestionable come-back during the last several years. The experience of the Scripps Motor Company is perhaps typical of many. During the war they went along at a pretty fast pace, and after the Armistice peacetime production was greater than the war-time rush. They have found it necessary to keep adding to their forces each month until today, notwithstanding the so-called financial and business depression, they have more men employed in their plant than ever before. The demands have been particularly strong for marine motors to be sold in foreign countries. Generally, this business is strongest during the early fall and winter months.

While the country at large has been on a buying strike those who have turned out a good article and given good service at a price that did not take advantage of conditions have nothing to worry about. Actual figures show that the production of Scripps motors is thirty per cent higher than in the corresponding period last year. Motor boating was a mighty popular sport during the last year and en-



with beauty, strength and cleanliness. A motor that will harmonize with the most elaborate furnishings and equipment.

These motors are to be had in two, four and six-cylinder units with a power range of from 9 to 54 h.p. in medium duty and semi-speed types. The bore of all models is  $4\frac{1}{2}$  inches and the stroke is 5 inches.

The arrangement of foundation lugs is such that engine timbers will pass the flywheel without notching.

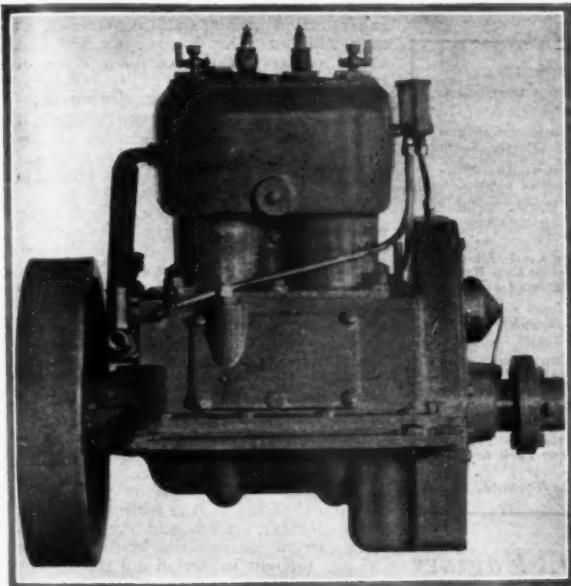
# New Two-Cylinder Motors

Small Units of the Four-Cycle Type Particularly Designed to Meet the Requirements of Small Boats

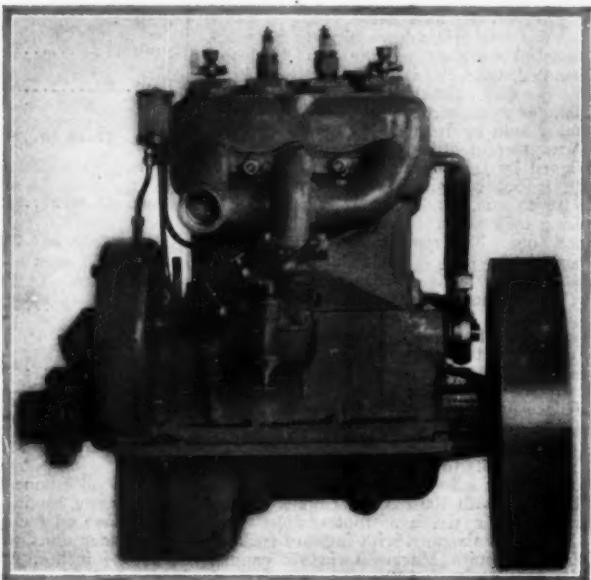
THE addition of two new sizes of motors to the models in production by the Kermath Manufacturing Company rounds out their assortment. These new motors are two-cylinder units with the same cylinder dimensions as their popular four-cylinder types and are conservatively

The engine will be built in both the separate engine plant type and also in the complete unit power plant, having the exact form and using the same heavy 5-blade multiple disc clutch and reverse gear that is used as standard equipment in the 12 and 16 h. p. motors. This large reverse gear used on a small engine of this kind will mean that the reverse gear is good for many years of service without any trouble whatever.

These engines are designed especially for trolling service and for small boats, and will prove a wonderful engine for use in the fishing industry where extreme efficiency and



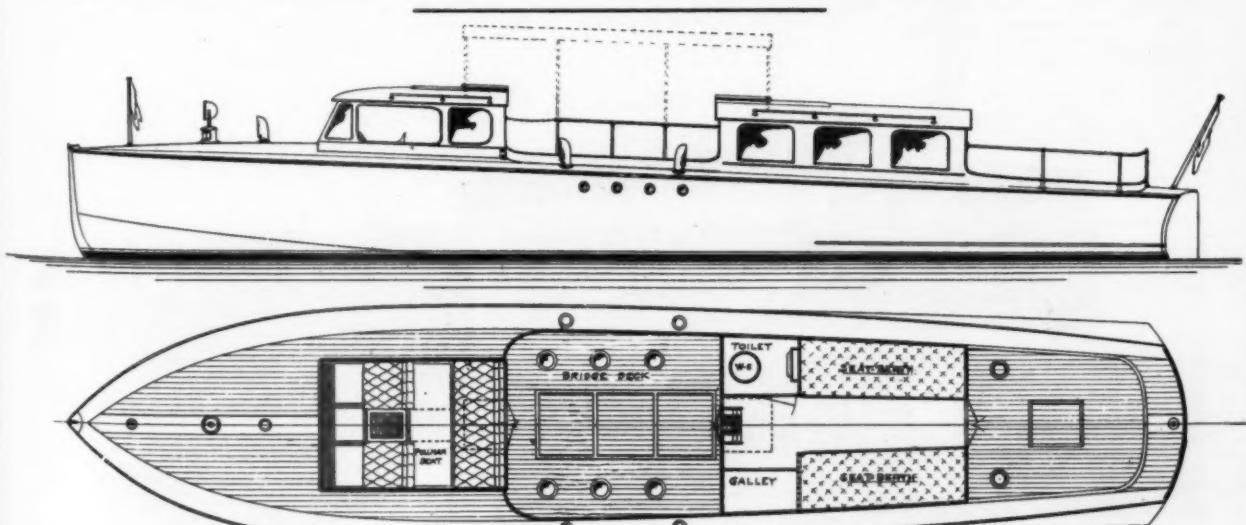
Port and starboard side views of the new two-cylinder model Kermath motors made in 3-5 h.p. and 6-8 h.p. sizes



rated at 3-5 h.p. and 6-8 h.p. each. The two sizes are identical except for cylinder bore, which is  $3\frac{1}{2}$  inches and  $3\frac{3}{4}$  inches with a 4-inch stroke.

The oiling system is the usual Kermath type, having a large oil reservoir and oil pump with an oil screening system and a large sight feed taking care of the entire lubrication of the engine and the timing gears. The standard ignition equipment will be Atwater Kent, with Bosch magneto and impulse starters optional.

unquestioned dependability are essential. They can, of course, be used with equal success in boats for pleasure purposes and the thing that will appeal to all persons desiring engines of this power for small boats is the fact that you have such wonderfully fine control and starting practically on one-quarter of a turn.



An original design for Webb Jay of Chicago by John L. Hacker, the Detroit naval architect, for a 42-foot 6-inch high speed day cruiser to be powered with a pair of Hall-Scott marine motors

# Yard and Shop

Notes of Interest to Both Owner and Manufacturer

## Selling Standardized Motor Boats

The Central Marine Service Corporation has been formed to take over the completed product of several of the best known boat builders and sell these on a large scale. Models which do not conflict in type with each other are to be built in as large quantities as possible and sold entirely from the one central agency in Detroit. The effect of this will be to reduce the selling cost first, by quantity production and second, by the elimination of duplication of sale's effort.

Very low prices have already been announced on two of the models being handled, viz.: 26-foot runabout being built by the C. C. Smith Boat & Engine Company of Algonac, and the 21-foot runabout being built by John L. Hacker of Detroit. A wonderful little runabout has been designed by John Hacker in which there is an 8-foot cockpit. It is an economical boat to run, its 20 h.p. Kermath motor using only about two gallons of gasoline per hour. The remarkable feature of the boat is that while every item found on the more expensive boats is included, the price is way under what would be considered fair. The seating arrangement of this boat is such that it can comfortably carry from five to seven people. The front seats are reversible so that the passengers can face each other when the boat is not underway. The hull is finished in copper green up to the waterline and white to the sheer plank.

Other boats to be distributed in the same manner are a 26-foot runabout, capable of 30 m.p.h., with 100-125 h.p. engine, seating capacity for six, a 35-foot express runabout, all mahogany, with forward cockpit, 450 h.p. Smith Marine Twin-Six engine, seating capacity for 10 or 12. Guaranteed speed of 45 miles, a 22-foot Smith built hydroplane equipped with 450 h.p. Smith Marine Twin-Six engine, capable of a speed of 65 m.p.h.

W. S. Reed of Indianapolis is President and Max von Schlegell is Secretary and Treasurer of the Central Marine Service Corporation with offices in the Vinton Building, Detroit, Michigan. The entire efforts of this company will be devoted to the sales of the boats, leaving the builders free to turn out a greater volume of work.

## New Evinrude Catalog

In line with their former practice, the Evinrude Motor Company, Milwaukee, has issued a new catalog describing all phases of Evinruding. The results of their latest effort are such as to make this latest catalog superior to all previous issues.

### RACING DATES FOR 1921

July 4	Mississippi Valley Annual Regatta.
July 9	New York to Block Island Cruiser Race.
July 16	New York to Newburgh and return.
Aug. 5	A. P. B. A. Cruiser Championship of America.
Aug. 17, 18, 19	Thousands Islands Challenge Cup Races on the St. Lawrence River.
Aug. 25, 26, 27	Fisher Trophy Races at Buffalo, N. Y.
Aug. 27, 29, 30	Gold Cup, One Mile Championship and Wood-Fisher Trophy Races at Detroit.
Sept. 3, 5, 6	Races for British International Trophy at New York or Detroit.
Sept. 5, 6, 7	Races at Toronto.

## The Latest in Oil Engines

A new oil engine is being produced by the Cummins Engine Company at Columbus, Indiana on the Hvid type, in one and two cylinder units with a bore and stroke of 5 x 7½ inches. Among the many good features of this machine over earlier types can be mentioned.

Complete absence of any electrical devices of any kind whatsoever, including magneto, batteries, coils, wires, plugs, etc. No carburetor or mixing valves.

Ability to burn low grade fuels of any kind, which means that the user of this engine need not fear what fuel he will be able to get the next year, or the year after, as any fuel that will flow freely is satisfactory.

The item of safety alone is one of its

greatest features, as in addition to not using any explosive fuel, there is no carburetor to overflow, and there is no possible chance for a back-fire, as that is an impossibility on this type of engine.

Dampness can have absolutely no ill effects on this engine, which means that the user need not fear foul weather.

These motors are noted for their peculiar action under sudden overload, as they will not slow down when the load comes on, as do the common types of engine.

They are easily started under any conditions of temperature or atmosphere. It is unnecessary to warm them up on any fuel different from that regularly used and they attain their full speed and power in a few seconds from starting cold.

A simple compression release does away with any danger of injury from kicking as they are cranked against compression.

Their wonderful economy over other types of engine makes them well fitted to marine work, where their duty is continuous and heavy.

Owing to their design, they use a very small amount of lubricating oil, and as the lubrication system is practically fool-proof, these motors should wear indefinitely.

These motors are being built in large quantities which means a low price. The first and only thought in turning out these motors is to build a machine that cannot be bettered as far as it is within the power of the builder. Each and every part is given careful consideration by the designer and this thought is carried out throughout the design resulting in a master piece of small engine construction.

## Exporting Many Knox Motors

The new Knox 20 h.p. motor which was exhibited for the first time at the recent show in New York is to be distributed in Australia, New Zealand, Argentine and Uruguay by Chipman Ltd.; in China by Anderson, Meyer & Co., of Shanghai; and in Japan by the Motor Boat Company of Tokyo.

This motor embodies many original features, among which can be mentioned the full pressure oiling system, which has been in successful use for many years.



The plant of the Sea Sled Company has just been moved from Boston, Mass., to West Mystic, Conn. Their new location is the plant which was formerly occupied by Wood & McClure

## A New Supply Company

The latest arrival in the motor boat supply and engine dealer's ranks is the Boston Motor Boat Supply Company, 100 Atlantic Avenue, Boston, Mass. Being situated directly on the water front, this new Company is in a position to give real service to motor boatmen. A complete line of motor boat equipment for both a pleasure boat and smaller commercial boats will always be carried in stock. Chris Opsahl, well-known throughout New England for his practical knowledge of marine engines, is at the helm of this new undertaking, and has under his supervision a staff of competent mechanics.

## Boat Plant for Revere

Work will shortly be started by the Shawmut Marine Company on a new boat building plant at Revere, Mass. Nine acres of land have been acquired with a thousand feet of water frontage and the machinery, etc., from the present West Lynn shops operated by Britt Brothers will be moved to the new plant upon its completion.

## Baltimore Service

"List your boat with Staley's Yacht Agency" is the slogan which has been adopted by B. Staley in his efforts to start a real service institution for the owner who wishes to dispose of or charter his yacht, or for the prospect in the market for purchase or charter. Mr. Staley's large experience in yachting circles should prove of untold value not only to his new Company, but also to his clients.

## Ole Evinrude Comes Back

All lovers of the great out-of-doors will be interested in the announcement that Ole Evinrude has come out of his seven years' retirement and has again actively identified himself with the detachable motor field.

Mr. Evinrude withdrew from his old company, which still bears his name, about seven years ago to take a long, well-earned vacation.

All play and no work, however, did not altogether satisfy Mr. Evinrude's native desire to do worth-while things. He turned his attention to the creation of a new detachable motor which seems destined to become the crowning achievement of his inventive genius. Among the advantages of Mr. Evinrude's new motor are: Lighter weight, two-cylinder construction; increased power, smooth running and absolutely weedless. Altogether it is a wonderfully compact, sturdy and powerful little machine. This motor will be placed on the market by the Outboard Motor Company, of which Mr. Evinrude is president, with temporary quarters in the Manufacturers Home Building, Milwaukee, Wis.

## A Typographical Error

In the advertisements of the Hess Mono Marine engine in the December and January issues of *MoToR BoatinG* the price

of the engine was incorrectly stated. In the December issue it was given as \$145 complete with propeller and clutch and in the January issue the same outfit was listed at \$175. Neither of these prices is correct. The correct price of the Hess Mono Marine, including high tension magneto, carburetor, hot spot manifold, timer, switch and spark coil, but not including either propeller or clutch, is \$175.

## A.P.B.A. Raises Dues

At the last annual meeting of the American Power-Boat Association action was



The 21-foot Hacker runabout equipped with a Kermath 20, which is being sold by the Central Marine Service Corp.

taken to increase the dues of member clubs so that each club should pay at the rate of \$10.00 for each representative to which it is entitled. In order to provide sufficient funds to carry on the work of the organization this increase was necessary and is very modest as compared with the work accomplished by the Association.

## Office in Miami

The Southern office of the Consolidated Shipbuilding Corporation has been reopened for the winter season at 1100 Boulevard, Miami, Florida, and will be under the direction of C. G. Amory, the treasurer of the Corporation.

## National Association Officers

At the annual meeting of the Executive Committee the following officers were

elected to serve for the ensuing year: President, Henry R. Sutphen; 1st Vice President, John J. Amory; 2d Vice President, Charles A. Criqui; 3d Vice President, George F. Lawley; Treasurer, James Craig.

## Life Preserver Patents

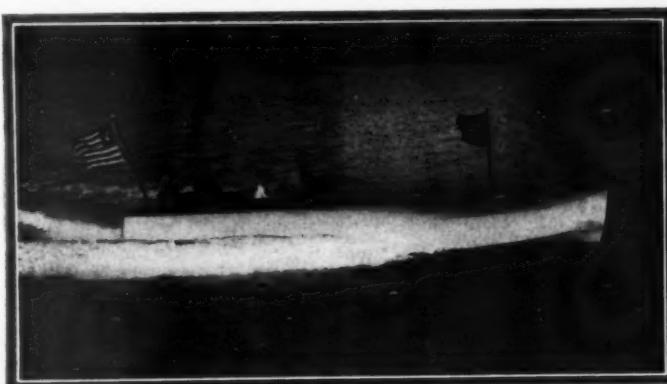
The terms of a patent granted to the G. H. Masten Company on January 25, 1921 on a reversible life preserver jacket having a collar, arm holes and flexible members between the pockets of buoyant material are broad. The latest requirements of the United States Steamboat Inspection Service which went into effect some time ago are completely fulfilled by these life preservers. The patents of the Masten Company are so broad that it is questionable whether any life preservers can be made to pass inspection which will not infringe on them.

## M. L. Oberdorfer Dies

We regret to have to announce the death of M. L. Oberdorfer, the president of the M. L. Oberdorfer Brass Company, Syracuse, New York. Mr. Oberdorfer had been actively engaged in the management in the business for many years and at the time of his death was well past seventy years of age.

## Marine Wheel Company Absorbs Michigan Wheel

A new corporation was formed for the purpose of manufacturing marine hardware and propellers of various kinds and has taken over the manufacture and sale of all products which were formerly made by the Michigan Wheel Company. The entire personnel of the old company has been distributed in the new corporation. Larger quarters have been secured in the Leonard Bldg., Grand Rapids, and production is going on at a lively rate. A most efficient and reliable reversing propeller which is positive in operation and trouble-proof is one of the many items being produced. The new officers of the Marine Wheel Company are the following: President, E. J. Martin, Vice-president, Lee R. Whitney, Secretary and Treasurer, M. E. Martin, and Assistant Secretary and Treasurer, E. L. Vandenberg.

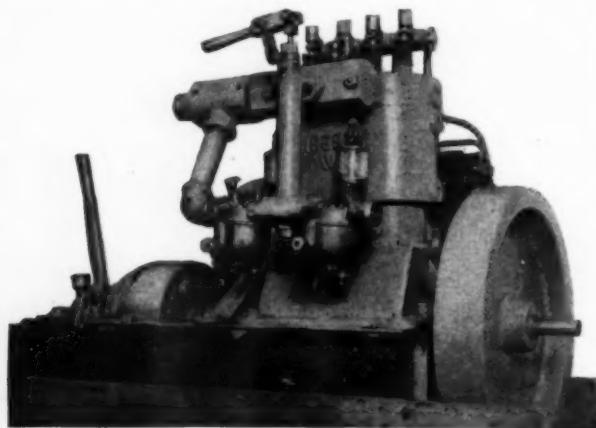


Examples of high class runabout construction being turned out by the Richardson Boat Co. Both use Scripps motors, the 25-footer above four-cylinder and the 28-footer a six-cylinder



## Dual Carburetor System

The result of careful research work on the part of the designers of the Liberty Twin engines have shown the desirability of fitting dual carburetors to enable the use of either gasoline or kerosene at will. The manufacturer, A. G. Hebgen has spared neither time nor expense in producing a motor which will show excellent fuel economy under hard continuous service. The engine can be operated on either fuel without any adjustment or change in the operation of the engine. A single manifold is used so arranged that the dual carburetor system will permit of swinging from one fuel to the other without stopping the motor. The control centers in an ingen-



Liberty twin engines are fitted with dual carburetors which permits them to run on either kerosene or gasoline

ious design to which the success of the device is due. Turning the throttle handle towards the front of the engine opens the gasoline port. Reversing the throttle position will permit the use of kerosene. The same throttle controls the amount of fuel supplied and at the same time governs the speed of the motor under either fuel, thus accomplishing three separate and distinct operations. The design of the motor has been undertaken with a view of using the motor under either fuel and sufficient heating arrangements are provided to insure perfect combustion under all circumstances. A pre-heating device on the kerosene side heats the air before it passes through the carburetor. The flexibility possible with these motors operating on either kerosene or gasoline is demonstrated by the speed range from a minimum of 200 revolutions on gasoline, 250 on kerosene to a normal rate of 850 revolutions. The power range will vary from four to ten horse-power depending on the number of cylinders and the revolution rate.

## Piston Ring Makers Expand

A full speed ahead policy for 1921 has been adopted by the Stark-Inland Machine Works of St. Louis, Mo., the manufacturers of one-piece piston rings. In order to meet the growing demand for their product a new plant has been erected which is about ready for occupancy and production. Facilities in the new plant which covers more than 70,000 square feet of floor space are ample to take care of the demand for piston rings. The features of their piston rings which commend them are an entirely new principle for quick seating and an oil groove which insures proper distribution of the lubricant, while an auxiliary groove scrapes the oil down preventing an excessive amount in

the cylinder head. In the old plant will be maintained the departments for the manufacture of tools and dies necessary in the new factory.

## A Unique Reverse Gear

The product of many years of successful production of marine reverse gears is that manufactured by the McKinnon Iron Works Company, Ashtabula, Ohio. This gear is the result of a request for a reverse gear many years ago from a local boatman. The initial gear built as a result of this proved so successful that ever increasing requests for duplicates came to the Company without solicitation. Having been practically forced into the manufacture of these gears it was decided to secure skilled engineers to refine the design before engaging in quantity production.

The first gear built after several years of hard service has not required any adjustment. It is surprisingly strong and sturdy and is believed to be one of the simplest and most durable gears on the market today.

## A Durable Wrench

A combination wrench set which will fit practically all nuts, bolts and screws to be found anywhere about the motor boat on either the hull or

the engine is that made by the Robinson Equipment Company, Boston, Mass. This practical and durable tool is designed for the use of the skilled mechanic as well as for the novice. The design is compact and the materials used are of the highest grade insuring ample strength under all conditions of service. The parts are hardened and especially heat treated to enable them to withstand shock and abuse. Offset combinations both with the socket wrenches and screw drivers find great favor among mechanics and users of this tool.

## Vibration

One of the most annoying features on many marine motor installations is the terrible amount of vibration which is present practically all the time. If the motor boat users only knew it this is an unnecessary evil to which they are subjecting themselves. The Vibration Specialty Company, Philadelphia has designed a type of crank shaft which is entirely free from vibration. The balance is so accurate that the shaft simply floats in its bearings without seeming to touch them at all. The entire motor power is thus available for propelling the boat instead of shaking it to pieces. A special machine has been perfected by means of which crank shaft balance can be obtained by every motor manufacturer. The results obtained by the

use of this machine are superior in accuracy and in the perfection of the results over all other machines.

## Be Prepared

The biggest organization designed to help the development of the American boy is the Boy Scouts of America. You all know about this and its mission to upbuild the character and help boys. To carry on this work help is required in the way of funds and interested fathers are invited to get in touch with George D. Pratt, 200 Fifth Avenue, New York, who has an interesting message for them.

## To Waterproof a Boat

A user of marine glue writes to the manufacturer, L. W. Ferdinand & Company, Boston, on the way in which he succeeded in waterproofing his boat. He states that "I caulked all the seams with soft cotton, driving it home snug. Payed each seam with Jeffery's No. 7 Black Soft Glue, painted along on each side of the seam for a full inch, two inches over all with hot glue, applied a strip of muslin over the entire hull and ironed it smooth, after which I gave the entire hull a full coating of Jeffery's No. 7 Black Soft Quality Marine Blue, applied the muslin and ironed it all smooth. After coating with shellac gave the entire surface two coats of paint. I put my boat overboard and have since cruised over eleven hundred miles in her, she being absolutely dry inside, due entirely to the aforesaid product. The muslin is as hard and smooth as rawhide and adhering closely to the wood. I find a hull treated with your glue is absolutely immune from water logging, a sad feature found in all wooden hulls."

## New Houseboat Ordered

As a forerunner to a busy season J. Heilner, a prominent yachtsman of New York City has just ordered a new houseboat of 73-feet length from the New York Yacht, Launch and Engine Company at Morris Heights, N. Y. This new boat is to be equipped with two-cylinder Twentieth Century motors and will be similar to the small model exhibited at the recent motor boat show.

(Continued on page 61)



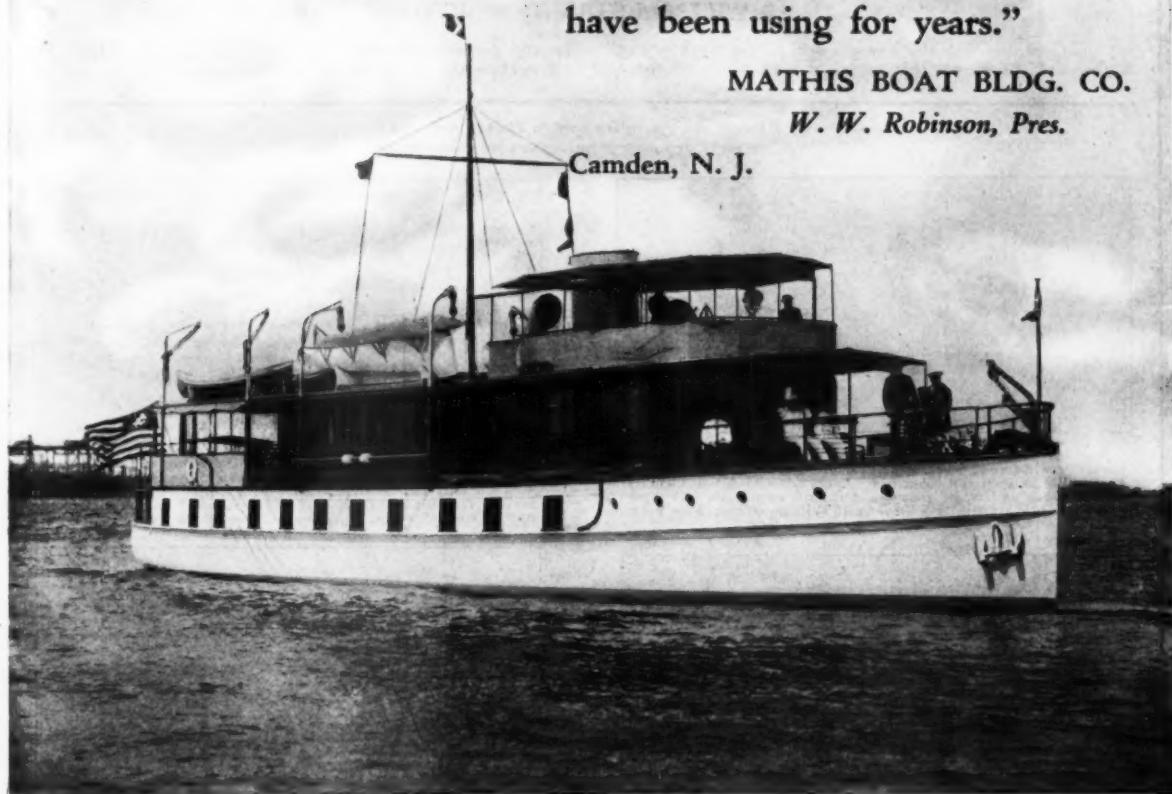
Gloucester schooner, *Seaward*, 110-foot long which was built by F. C. Adams, East Booth Bay, Maine, and equipped with a 65 H.P. four cylinder Acme kerosene engine is now in San Francisco harbor having been brought around from Maine through the Panama Canal, having gone down the West Coast of South America some little distance. The engine is operated upon kerosene and gives very good satisfaction

"On this boat we used Valspar Varnish, which varnish we have been using for years."

MATHIS BOAT BLDG. CO.

*W. W. Robinson, Pres.*

Camden, N. J.



As luxuriously fitted as a home ashore is the *Leonie*, Mr. Murray Guggenheim's 106-foot house-boat.

Valspar—tough, durable, waterproof—protects the deck and all wood-work from fogs, mist, rain and blistering hot sun. It keeps the *Leonie* trim, shining, "ship-shape" all the time.

The booklet, "How to use Valspar on Boats," is full of useful varnish and paint tips. We will send it to you on request.

## VALENTINE & COMPANY

*Largest Manufacturers of High-Grade Varnishes in the World—Established 1832*

New York Chicago Boston Toronto London Paris Amsterdam

W. P. FULLER & CO., Pacific Coast



VALENTINE & COMPANY, 456 Fourth Avenue, N. Y.

Special Offer

For your dealer's name and 15c in stamps, we will send you a 30c sample can of Valspar—enough to finish several square feet of surface. Fill out Coupon.

Dealer's Name.....

Your Name.....

Your Address.....

M. B.—3-21

Cable Address:  
BROKERAGE, NEW YORK

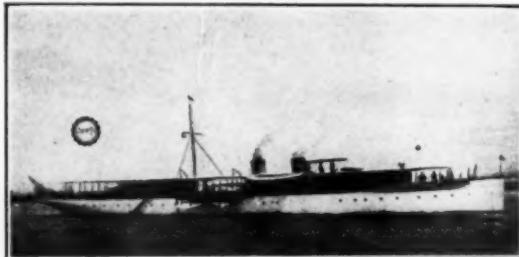
# COX & STEVENS

NAVAL ARCHITECTS—MARINE INSURANCE—YACHT BROKERS  
15 WILLIAM STREET, NEW YORK

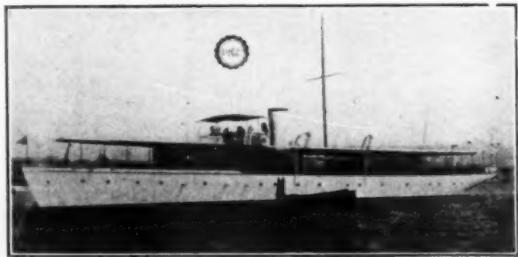
Telephones:  
BROAD 1924  
BROAD 1375

Complete list of all steam and power yachts, auxiliaries and houseboats available FOR SALE and CHARTER. A few are shown on this page. Plans, photographs and full particulars furnished on request.

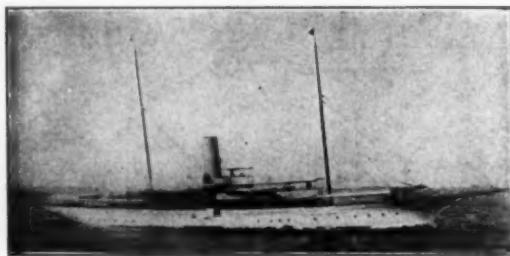
Direct representative now in Florida prepared  
to serve prospective purchasers or charterers.



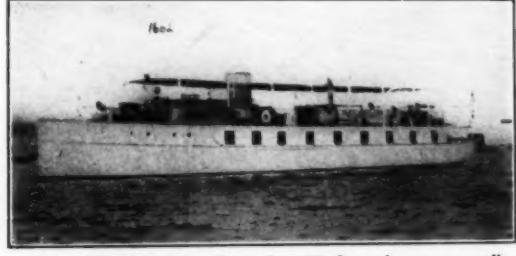
No. 3047—For Sale—Particularly attractive 165 ft. fast oil-burning twin-screw, steel steam yacht. Speed up to 19 miles. Beautifully finished and furnished. Large accommodation includes dining saloon and music room on deck, six staterooms and three bathrooms below aft. Cox & Stevens, 15 William Street, New York.



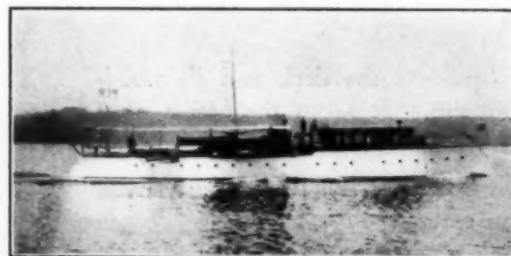
No. 1466—For Sale or Charter—Particularly desirable 140 ft. twin-screw steel cruising power yacht. Speed up to 18 miles; two 300 H.P. Standard motors. Dining saloon and social hall on deck; 3 double and 1 single staterooms, 3 bath and toilet rooms, etc. Recently overhauled thoroughly at large expense. In splendid condition. Cox & Stevens, 15 William Street, New York.



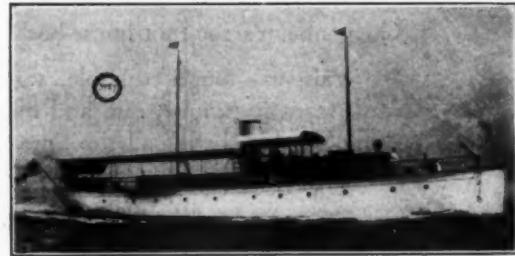
No. 71—For Sale—200 ft. seagoing steel steam yacht. Lloyds highest rating. Cox & Stevens, 15 William Street, New York.



No. 1662—For Sale—Attractive 90 ft. twin-screw gasoline houseboat. Speed 10-12 miles. Large saloon, four staterooms, two bathrooms. All conveniences. Handsomely furnished. Cox & Stevens, 15 William Street, New York.



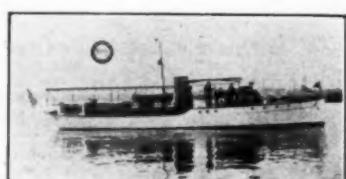
No. 979—For Sale—Might Charter—Especially desirable 98 ft. twin-screw cruising power yacht. Speed up to 16 miles. Standard motors. Deck dining saloon, three double and one single staterooms, two bathrooms, etc. Teakwood deck house and deck trim. Completely overhauled, new furnishings throughout. Price reasonable. Cox & Stevens, 15 William Street, New York.



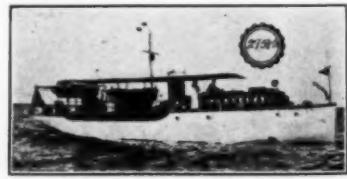
No. 3489—For Sale—Exceptionally high-grade twin-screw cruising power yacht; 90 x 16.3 x 5.2 ft. draught. Built 1917. Speed up to 16 miles; two 115 H.P. Winton motors. Large dining room in deckhouse forward; two double and one single staterooms; bath room and 2 toilets, room, pantry, galley, etc. Large deck space. Price attractive. Cox & Stevens, 15 William Street, New York.



No. 3151—For Sale or Charter—Particularly desirable twin-screw houseboat; 77 x 17.6 x 3 ft. Speed 11 miles; two 6 cyl. 60-70 H.P. Standard motors new 1919. Large deckhouse containing social hall; main saloon, two double and two single staterooms, two bath and toilet rooms, etc. Handsomely finished and furnished. Cox & Stevens, 15 William Street, New York.



No. 3533—For Sale—Fast 72 ft. twin-screw cruising power yacht. Speed up to 17 miles; two 6 cyl. 125-150 H.P. Winton motors. Dining saloon, two double staterooms, bath and two toilets, galley, etc. Cox & Stevens, 15 William Street, New York.



No. 2758—For Sale—Bridge deck cruiser; 65 x 13 x 3.6 ft. draft. Deck house forward containing dining saloon and galley. One double and one single stateroom. "20th Century" motor. Independent lighting system. Speed up to 12 miles. Cox & Stevens, 15 William Street, New York.

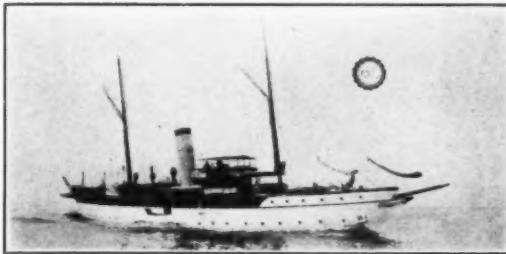
Cable Address:  
BROKERAGE, NEW YORK

# COX & STEVENS

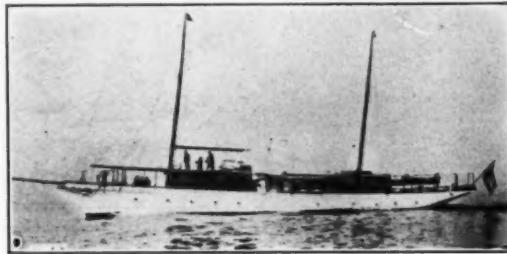
NAVAL ARCHITECTS—MARINE INSURANCE—YACHT BROKERS  
15 WILLIAM STREET, NEW YORK

Complete list of all steam and power yachts, auxiliaries and houseboats available FOR SALE and CHARTER. A few are shown on this page. Plans, photographs and full particulars furnished on request.

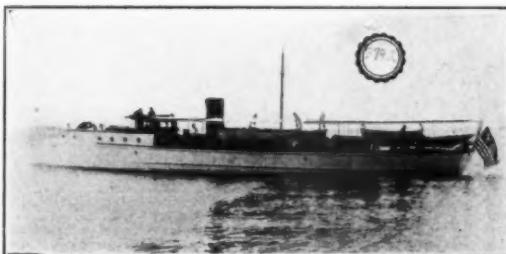
Direct representative now in Florida prepared  
to serve prospective purchasers or charterers.



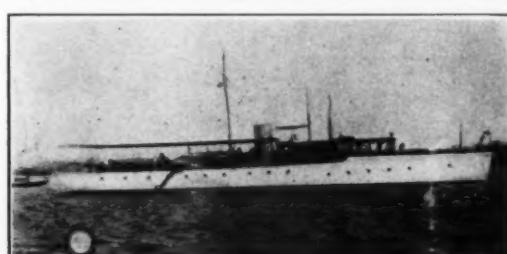
No. 12—For Sale—200 ft. seagoing steel steam yacht, oil-burning. Splendid accommodations. Large cruising radius. Excellent condition. Cox & Stevens, 15 William Street, New York.



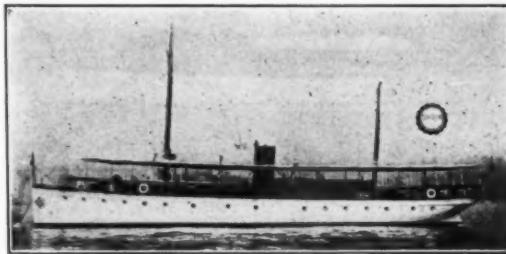
No. 40—For Sale—Flush deck steel steam yacht, 140 x 110 x 18 x 7.6 ft. draft. Has two deck houses, after one being used as a social hall. Quarters handsomely furnished and well laid out. Boiler and engine new 1916. Speed up to 14 miles. Cox & Stevens, 15 William Street, New York.



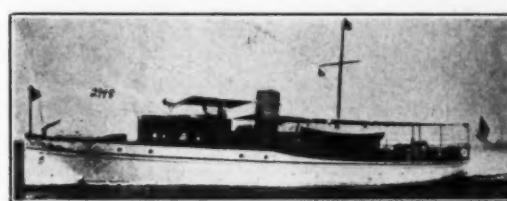
No. 3742—For Sale—Fast oil burning steam yacht; 115 x 16 x 6 ft. draft. Built 1919. Saloon, three staterooms, bathroom, etc. Economical to operate. Splendid boat for ferry service. Cox & Stevens, 15 William Street, New York.



No. 285—For Sale—Fast steel twin-screw gasoline yacht; 118 x 15.6 x 5 ft. Speed 16 miles; two 6 cyl. 225/250 H.P. Winton motors new 1920. Accommodations include dining saloon, main saloon, three double staterooms, 2 bathrooms and three toilets, etc. Cox & Stevens, 15 William Street, New York.



No. 2425—For Sale or Charter—Twin-screw cruising power H.P. yacht; 90 x 16.6 ft. Speed up to 12½ miles; two 6 cyl. 60/90 H.P. motors. Excellent accommodation. Cox & Stevens, 15 William Street, New York.



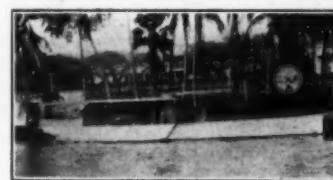
No. 2978—For Sale—Desirable twin-screw cruising power yacht; 80 x 14 x 4 ft. Speed 13 miles; two 50/60 H.P. Twentieth Century motors new 1919. Dining saloon, two double staterooms, bathroom and two toilets, galley, etc. Recently thoroughly overhauled at large expense. Cox & Stevens, 15 William Street, New York.



No. 2564—For Sale—50 foot Elco bridge deck cruiser. Built 1917. Speed 12 miles. 6 cyl. 60/85 H.P. Sterling motor. Double stateroom, saloon with upper and lower berths, toilet room, galley, etc. Price attractive. Cox & Stevens, 15 William Street, New York.



No. 3678—For Sale—Bridge deck cruiser, 58 x 13 x 4 ft. New 1916. Speed up to 12 miles. 50 H.P. Standard motor. Dining saloon containing two Pullman berths, two double staterooms, two toilet rooms, galley, etc. Cox & Stevens, 15 William Street, New York.



No. 2508—For Sale—Fast bridge deck cruiser, 65 x 10.5 x 3.6 ft. Speed up to 16 miles. 6 cyl. 125/150 H.P. Standard motor. Double stateroom, dining saloon, bath and toilet room. Unusually large deck space. Construction of best. Further particulars from Cox & Stevens, 15 William Street, New York.

NAVAL ARCHITECTS  
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YACHT BROKERS  
MARINE INSURANCE

**HENRY J. GIELOW, Inc.**  
25 WEST 43rd STREET, NEW YORK

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Crocis, New York  
A.B.C. Code

Plans and specifications for new yachts of any size or type should be prepared now to assure delivery for next year. Have plans of new yachts, all types, on file now.

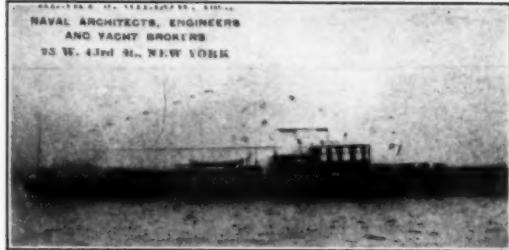
We have a most complete and up-to-date list of steam and motor yachts of all sizes, sail, auxiliary, and houseboats on file in my office, kept constantly up-to-date by a thorough and comprehensive canvas of the entire yachting field from time to time. We are in a position to submit full information on any type of boat upon request.



No 7076—For Sale—Attractive, roomy, fast, 73 ft. twin-screw motor yacht. Seabury built, new 1919. Well ventilated throughout. Speed-way motors. Entire outfit in A-1 shape. Has one double, one single stateroom, bathroom, large dining saloon below, unusually large lounging room in deck house containing combination Wurlitzer player piano and victrola. Fully found in every respect. Equipment most luxurious. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 7414—For Sale—42 ft. cruiser, 10 miles per hour. 30 H.P. Standard motor. 4 single, 2 double berths. Built of old fashioned seasoned oak and pine, brass screw fastened. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 7007—For Sale—Snappy and attractive 120 ft. steel twin-screw fast motor yacht, thoroughly overhauled. Owner unable to use boat this coming year. Inspection desired. Located New York. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 7589—For Sale—38 ft. raised deck cruiser, equipped with Sterling motor. Sleeping accommodations for 4 people. Interior finish mahogany. First-class sea boat in good condition. Located Florida. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 7629—For Sale—Very attractive 59 ft. day cruiser. Standard motor. Built by Herreshoff. In excellent condition throughout. Owner anxious to sell. Submit offer. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 7416—For Sale—41 ft. raised deck cruiser. Equipped with Sterling engines, installed new 1916. Sleep comfortably six people. Completely furnished. Boat offered at attractive figure. Located near New York. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 9565—For Sale—131 ft. steam yacht in excellent condition throughout. 3 double, 3 single staterooms; 2 deck houses containing dining saloon and social hall. Owner has larger yacht reason for selling. Located New York. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.

NAVAL ARCHITECTS  
ENGINEERS  
YACHT BROKERS  
MARINE INSURANCE

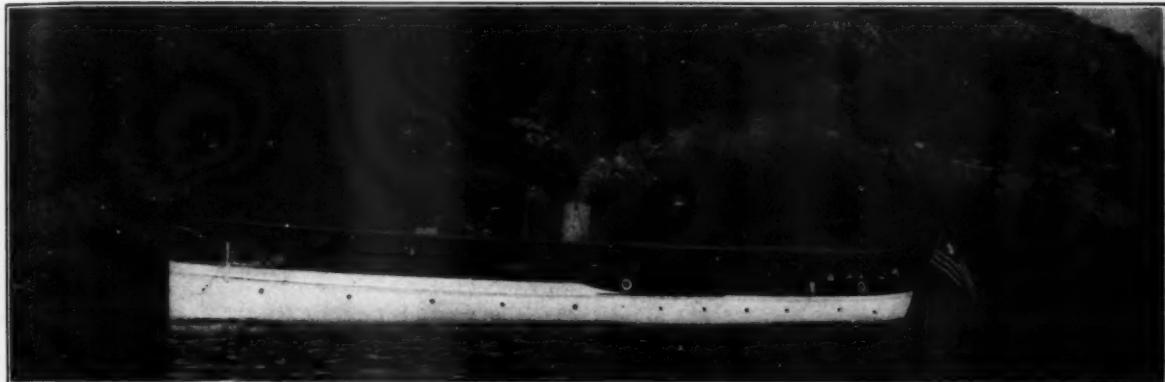
## HENRY J. GIELOW, Inc.

25 WEST 43rd STREET, NEW YORK

Tel.: Murray Hill 9134  
Cable Address:  
Crogie, New York  
A.B.C. Code

Plans and specifications for new yachts of any size or type should be prepared now to assure delivery for next year. Have plans of new yachts, all types, on file now.

We have a most complete and up-to-date list of steam and motor yachts of all sizes, sail, auxiliary, and houseboats on file in my office, kept constantly up-to-date by a thorough and comprehensive canvass of the entire yachting field from time to time. We are in a position to submit full information on any type of boat upon request.



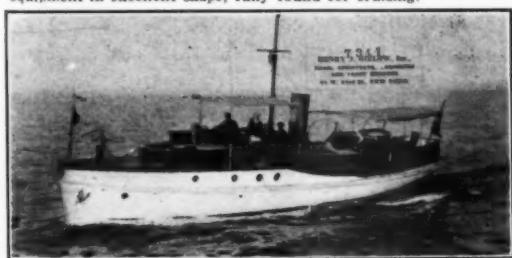
No. 7010—For Sale—Offered at bargain price this 112 ft. twin-screw Lawley motor yacht. 2 deckhouses containing dining saloon and social hall, 2 double and 2 single staterooms, large main saloon, bathroom. Exceptionally well built, able cruiser, in excellent condition. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 7634—For Sale—Exceptionally able, seagoing gasoline cruiser in first class condition. 45 ft. o.a., 9.4 ft beam, 3 1/2 ft. draft. Designed and built by Lawley. Sleeps 8 people. Heavy duty Sterling motor, practically new. Speed 12 miles. Separate electric plant. Permanent deck house, ideal feature. Entire equipment in excellent shape, fully found for cruising.



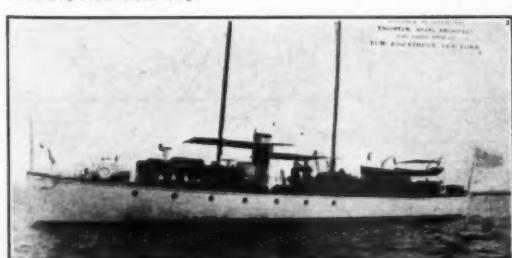
No. 7364—For Sale—New 45 ft. Hand "V" bottom express cruiser. Speed up to 22 miles. Sterling engine. In excellent condition, used very little. Can be purchased at attractive figure. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



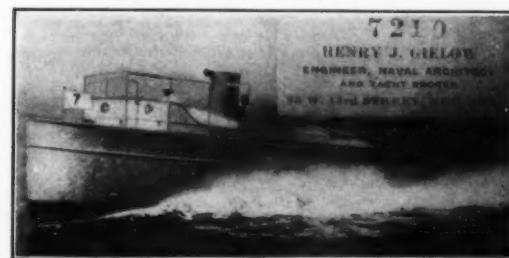
No. 7341—For Sale—51 ft. raised deck cruiser. Heavily built. In excellent condition. Very able sea boat. One double and one single stateroom. Sterling engine. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 7320—For Sale—51 ft. raised deck cruiser. 2 double staterooms, deck dining saloon. Well built, excellent sea boat. Equipped with 40 H.P. Murray & Tregurtha motor. Good purchase. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 7032—For Sale—95 ft. twin-screw steel power yacht. Standard motors. Finished throughout in mahogany. 2 large double staterooms, dining saloon. Always well taken care of and in fine condition. Owner will consider smaller boat in trade. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 7210—For Sale—54 ft. twin-screw express cruiser. Thoroughly overhauled and rebuilt by builder last year. Built in 1916. Van Blerck motors. Speed up to 25 miles. Can be bought at low figure. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.

NAVAL ARCHITECTS  
ENGINEERS  
YACHT BROKERS  
MARINE INSURANCE

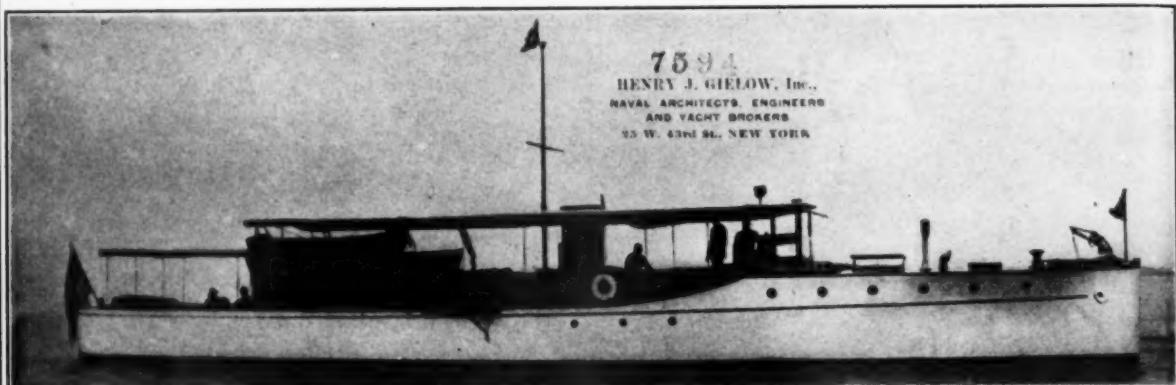
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25 WEST 43rd STREET, NEW YORK

Tel.: Murray Hill 9134  
Cable Address:  
Crogie, New York  
A.B.C. Code

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No. 7594—For Sale—Brand new 80 ft. twin-screw express cruiser. Seabury build. Double planked hull. Equipped with Speedway motors. Speed 18 to 21 miles. Fully furnished in every respect. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



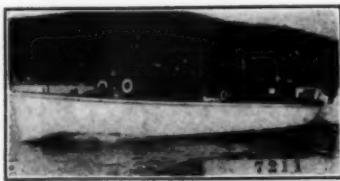
No. 7097—For Sale or Charter—Most attractive 72 ft. power yacht, thoroughly overhauled 1920. New fittings and furnishings at that time. Ideal sea boat. Wonderful deck space. Offered at bargain figure. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 7069—For Sale—86 ft. twin-screw motor yacht in excellent condition. Located at Buffalo. Owner anxious to sell. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 7300—For Sale—High speed day cruiser. Length 48 ft., beam 7 ft. 6 inches. Speed 34 miles. Seats 9 comfortably in front cockpit and 8 in rear. Automobile top over front cockpit, which has been removed in picture. 400 H.P. 8 cylinder Duesenberg motor, in good condition. Hull in perfect condition and is finest quality and construction. Located on Great Lakes. Bargain. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 7211—For Sale—59 ft. power yacht. Standard motor. Owner states in excellent condition. Located in New York. Interior finish mahogany. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 7397—For Sale—40 ft. semi-houseboat cruiser. Hand design. Good accommodations. Offered at low figure. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 7133—For Sale—68 ft. raised deck cruiser in good condition. Fine sea boat. Two double staterooms and saloon. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.

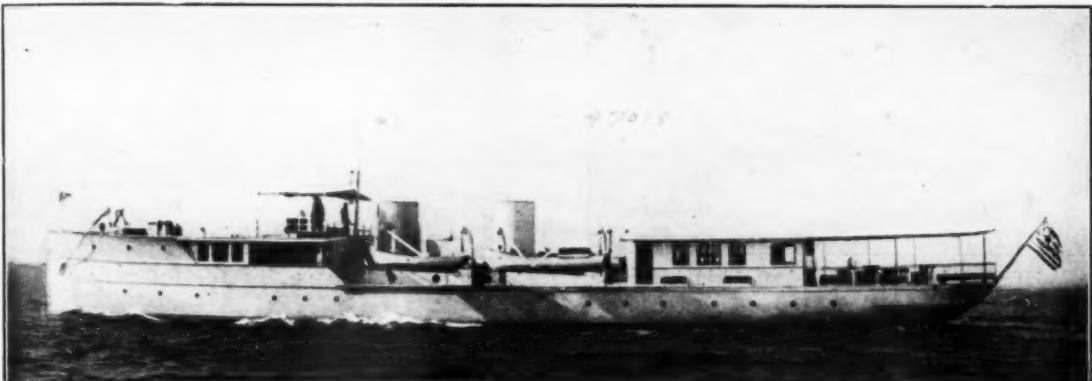
# TAMS, LEMOINE & CRANE

NAVAL ARCHITECTS  
AND  
YACHT BROKERS

Telephone  
4510 John

52 Pine Street  
New York City

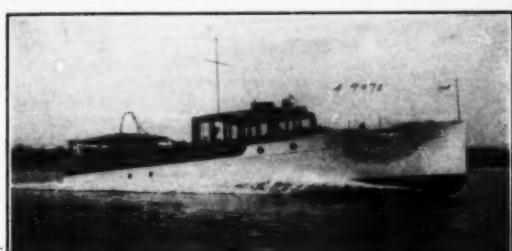
Offer for sale the following yachts, some of which are available for charter



No. 7098—Unusual opportunity to purchase the largest cruising steel motor yacht afloat—140 ft. overall—19 ft. 6 in. beam—6 ft. 6 in. draft. Designed by Tams, Lemoine & Crane and built by Lawley. An exceptionally able yacht. Triple screw having three 6 cylinder. Speedway motors. Gasoline consumption low. Speed 16 miles per hour. Large cruising radius. Has very commodious owners' quarters attractively fitted and furnished. In absolutely A-1 shape throughout.



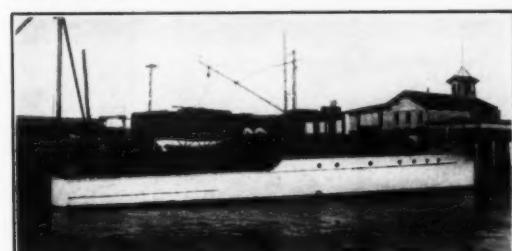
No. 7474—Sale—Brand new fast cruiser; 2-6 cylinder Sterling motors. Speed 21½ miles. All modern conveniences.



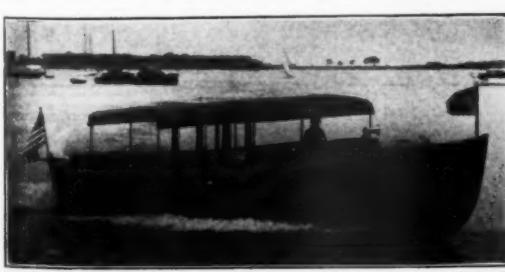
No. 9078—Sale or Charter—Fast 48 ft. express cruiser in commission. Immediate delivery—2 new 6 cylinder Van Blerck motors. Good accommodations. Thoroughly overhauled this year in all departments.



No. 8102—Sale—Charter; most desirable raised deck cruiser available. Practically new. 81 ft. x 13 ft. x 5 ft. draft. Speed 15 miles. Electric light, hot water, heat and refrigerating plant.



No. 9075—For Sale—Desirable raised deck cruiser 70 ft. x 11 ft. x 4 ft. Good accommodations. Speed 23 miles.



No. 8949—For Sale—38 x 35 x 8 x 3, life boat type, with small cabin forward. Large cockpit. Powered with 6 cylinder Sterling. Inspectable near New York. Price reasonable.



No. 1927—Sale—Charter—Very desirable, twin screw house boat; 5 staterooms, 3 bathrooms, dining saloon, lighted by electricity and hot water heat.

# EDWARD P. FARLEY CO.,

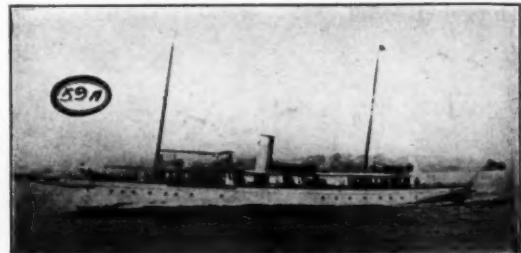
Naval Architects, Yacht Brokers, Surveying, Marine Insurance

We have a complete list of all Steam and Power Yachts, Auxiliaries and Houseboats which are offered for sale and charter

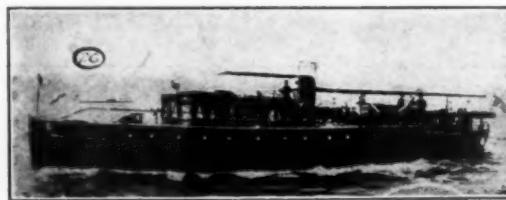
Plans, Photographs and full particulars furnished on request.



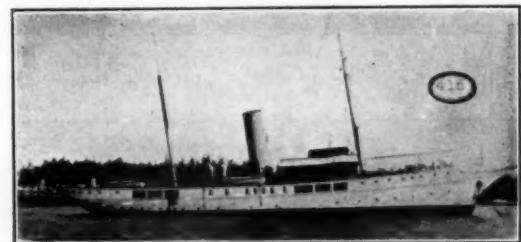
No. 573—For Sale—91 ft. x 14 ft. x 4 ft. 3 in. twin-screw gas yacht. Built 1917. Winton motors. Speed up to sixteen miles. Roomy accommodations with every convenience. In excellent condition. Equipment of the best. Edward P. Farley Company, 6 North Michigan Ave., Chicago, Ill.



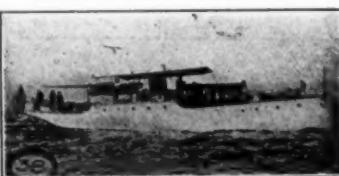
No. 59a—For Sale—170 ft. steel steam yacht. Six double staterooms, large dining saloon and social hall on deck. Speed up to fifteen miles. Excellent condition throughout. Edward J. Farley Company, 6 North Michigan Ave., Chicago, Ill.



No. 26—For Sale—100 ft. twin-screw power yacht of recent construction and thoroughly modern in all details. Has exceptionally accommodations consisting of three double and two single staterooms, dining saloon in deckhouse forward. An able and comfortable cruiser. Edward P. Farley Company, 6 North Michigan Ave., Chicago, Ill.



No. 415—For Sale or Charter—Thoroughly modern twin-screw steel steam yacht. 210 ft. x 32 ft. x 13 ft. draft. Recently built in Scotland to Lloyd's highest class. Excellent seagoing. Equipped for extensive cruising. Cold storage, wireless, etc. Cruising speed 11 to 12 knots. Edward P. Farley Company, 6 North Michigan Ave., Chicago, Ill.



No. 38—For Sale—78 ft. Lawley built double stateroom cruiser. Winton motor. Two commodious double staterooms. Two toilets. Dining saloon in deckhouse forward. A very able and modern boat. Edward P. Farley Company, 6 North Michigan Ave., Chicago, Ill.



No. 542—For Sale—40 ft. Great Lakes military type express cruiser. Double stateroom aft. Dining saloon and galley forward. Fully equipped. Speed 18 miles. Overhauled, refinished and new motor installed 1920. Edward P. Farley Company, 6 North Michigan Ave., Chicago, Ill.



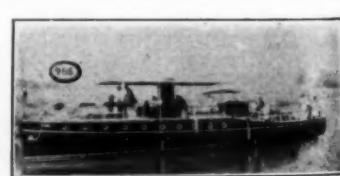
No. 548—For Sale—Attractive bridge deck power cruiser. 65 ft. x 13 ft. x 4 ft. 8 in. draft. Thoroughly modern and splendid seagoing. Bargain for immediate sale. Edward P. Farley Company, 6 North Michigan Ave., Chicago, Ill.



No. 550—For Sale—Raised deck cruiser. 56 ft. x 13 ft. 6 in. x 3 ft. 5 in. draft. Unusually large and comfortable accommodations. Two double staterooms, large main saloon, deckhouse, etc. Finished throughout in the best manner and fully equipped for extensive cruising. Edward P. Farley Company, 6 North Michigan Ave., Chicago, Ill.



No. 451—For Sale—85 ft. x 15 ft. 6 in. x 4 ft. power yacht. Attractively furnished and fitted throughout. Equipped for extensive cruising. Two double and one single staterooms, bath, etc. Has deck social hall. (Located Great Lakes.) Edward P. Farley Company, 6 North Michigan Ave., Chicago, Ill.



No. 986—For Sale or Charter—1919 twin-screw cruiser. Houseboat type. 62 ft. x 15 ft. 4 in x 2 ft. 6 in. Sterling motors. Speed 12 miles. Attractively arranged and furnished. Constructed for use in northern and southern waters. Edward P. Farley Company, 6 North Michigan Ave., Chicago, Ill.

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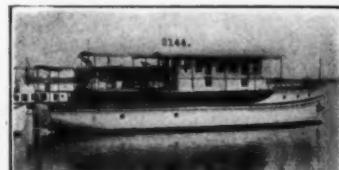
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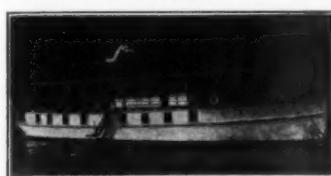
No. 2081—58 foot cruiser. Two double staterooms, main saloon with two Pullman berths, etc. Two toilets. Mahogany finish. 50-54 H.P. Standard motor. Speed up to 14 miles. Electric lights, etc.



No. 2031—40 foot cruiser, V-bottom. Double stateroom, main saloon with two upper and two lower berths. 60-85 H.P. Sterling motor. Speed 15 knots. Electric lights, etc.



No. 2144—60-ft. yacht. Draft 2 ft. 8 in. Two double staterooms, main saloon, large deck saloon, bath, etc. 60 H.P. Sterling motor. Speed, 10-12 miles.



No. 4322—Sale or Charter—Twin-screw 35 foot power houseboat. Five staterooms, dining saloon, three baths, etc. Speed 10 miles.



No. 2220—30 foot V-bottom mahogany speed launch. Hand design. Six cylinder "E" special Van Blerck motor. Speed 30 miles and over.



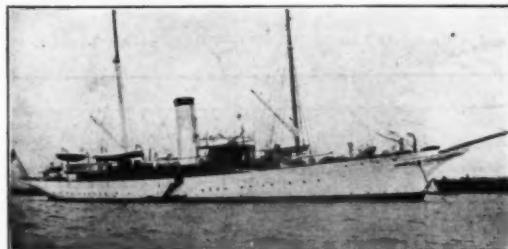
No. 2136—Sale or Charter—Twin screw 30 foot power yacht. Two double staterooms, dining saloon, etc. Two 220 H.P. Standard motor. Speed up to 21 miles.

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1170 WhitehallCable Address  
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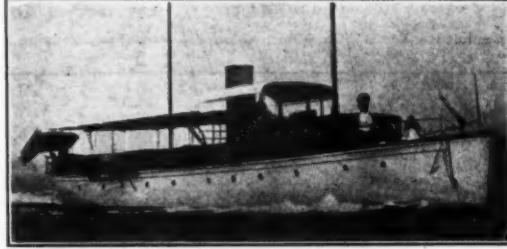
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29 BROADWAY NEW YORKHigh class yachts of all types for sale and charter;  
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No. 5266—Steel ocean going steam yacht. Length 230 ft. Built to Lloyds highest rating. Frank Bowne Jones, Yacht Agent, 29 Broadway, New York.



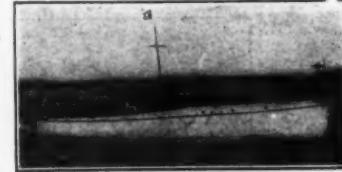
No. 4523—90 ft. twin-screw gasoline power yacht. One of the most desirable yachts of the type. Speed up to 16 miles. Winton engines. Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.



No. 4079—70 ft. auxiliary cruiser. Lawley built. Winton engine. Reasonable price. Frank Bowne Jones, Yacht Agent, 29 Broadway, New York.



No. 1212—One of the fastest and largest of the express yachts. Speed over 30 miles. Twin-screw. Perfect condition. Frank Bowne Jones, Yacht Agent, 29 Broadway, New York.



No. 7159—Attractive 52 ft. gasoline cruiser. Lawley built. Sterling engine. Excellent condition. Frank Bowne Jones, Yacht Agent, 29 Broadway, New York City.

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## WILLIAM GARDNER & CO.

Naval Architects, Marine Engineers and Yacht Brokers

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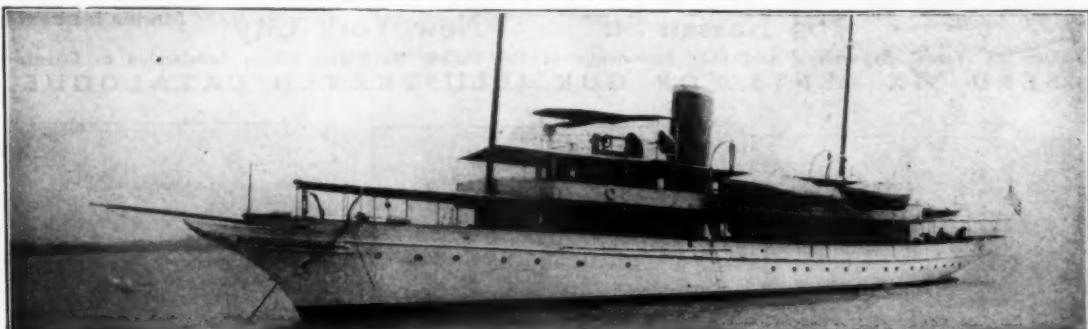
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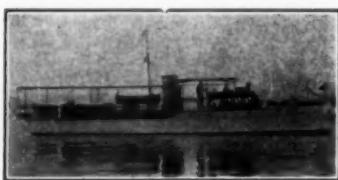
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Plans, Photos and full particulars furnished on request



No. 659—Steel steam yacht, deep sea type, 187 x 24 x 10. Of best construction throughout, and of recent build from our designs. Promenade deck full width of boat. Has two large deck houses, with chart house and Captain's room on upper deck. Finely appointed owner's and guests' quarters. Was not used in Government Service. In best possible condition and should be seen to be fully appreciated. Inspection invited.



No. 2456—Able power yacht, twin-screw, 72 x 13.3. Two 6 cylinder Winton motors. Speed 15 knots. Everything first class condition.



No. 2504—Express cruiser, 45 x 10.6, six cylinder Sterling. Speed 14/18 miles. Sleeping accommodations for four, besides crew. A-1 proposition.



No. 2044—Bridge deck cruiser, 63 x 13.6 x 4. Twentieth Century motor, 4 cylinder. Speed 11/12 miles. Attractive interior arrangement.

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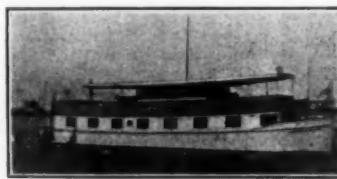
Communicate With This Office. Personal Attention, Prompt Service, and a Complete List of Desirable Yachts of All Types Offered.



No. 267—For Sale—51 ft. cruiser, sleeping 8 persons. Standard motor. Speed 11 miles. Very able cruiser offered at an attractive price.



No. 1034—For Sale—80 ft. twin-screw cruiser. 2 double, 1 single staterooms, 1 bathroom. Speed 14 miles. Highclass and in the best of condition.



No. 1217—For Sale—63 ft. power house boat. 1 double, 2 single staterooms, bathroom, etc. Very desirable floating home and cruiser.

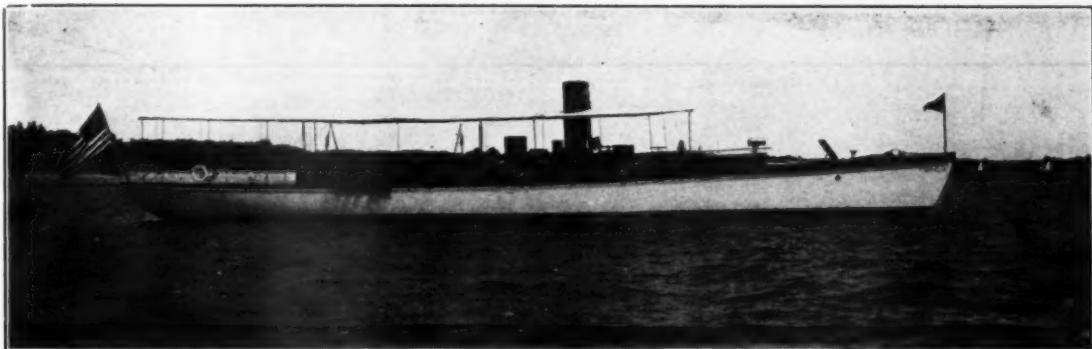


No. 501—For Sale—60 ft. cruiser. 2 double staterooms. Speed 11 miles. Very roomy and seaworthy yacht which has had excellent care and attention.

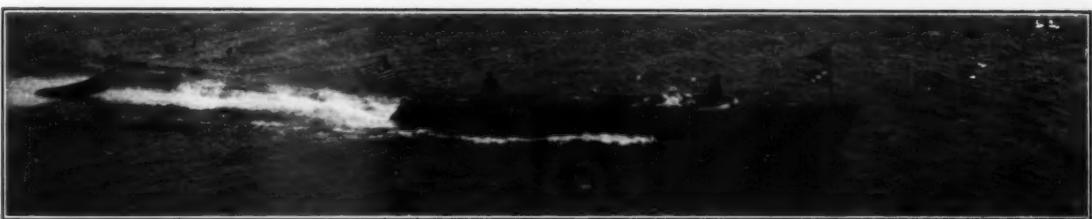
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# MORGAN BARNEY

NAVAL ARCHITECT  
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Yachts  
for Sale

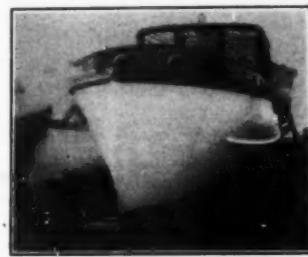
80 foot cruising yacht. Speed 20 miles. Condition A-1. Offered at \$12,500. Exceptional value. Now at Greenwich. Inquire of Morgan Barney.



54 foot Seabury twin-screw day cruiser. Speedway engines. Teak hull. Offered at pre-war value. Inquire of Morgan Barney.



For Sale—Steam Yacht—Tams, Lemoine and Crane design. Lawley built. 101 ft. length over all; beam 15 ft. 325 H.P. engine in first class condition. Two large master's staterooms, large saloon. Sleeping accommodations two quarters seven. Large dining saloon forward and galley below. Interior finish, white and mahogany. Electric lights, steam heat, shower baths. Recently overhauled at great expense. Machinery, boiler and equipment in excellent condition. Much new upholstery and equipment. Yacht has not been used since overhauling. Especially seaworthy and roomy, comfortable boat. Apply to George W. Jackson, Room 22, 683 Atlantic Ave., Boston, Mass.



For Sale—This up-to-date new \$12,000 cruiser, just been finished. Length 35 ft., beam 9 ft. Built of the best material, copper fastened, cabin all mahogany, comfortable accommodation for four people. Large toilet room with lavatory, refrigerator, sink, running water, stoves, fireless cooker, buffet, dish closet, clothes closet. Boat lighted by electricity. Large cockpit with wind shield. Engine 75-100 H.P. Van Blerck, with self starter and generator, one man control. Speed about 18 miles. Owner desirous to sell on account of business difficulty. Sacrifice for \$6000. Ed. Keil, Maple Ave., North Beach, L. I., N. Y.

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These engines are completely overhauled, rebuilt and refinished by our marine engine experts. Look like new, run like new, and are thoroughly guaranteed. Here's a chance to get a high-grade motor at a big saving.

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Agents for Sterling, Scripps, Frisbie, Ker-  
math, Universal, Gray & Evinrude Motors.  
New engines and repair parts always in stock.



from New England to New York in Motor Boating, Jan., 1918. F. W. Haemmel, 3 East 38th St., New York, N. Y.

For Sale—Raised deck cruiser, 46 ft. x 11 ft. 45 H.P. Sterling engine. Independent electric plant. Built days labor. Apply "Cruiser," General Delivery, Atlantic City, New Jersey.

Wanted—Reduction gear for 8 to 15 H.P. power plant. What have you? Dr. P. Kesling, Campbell, Mo.

**SACRIFICE**—250 H.P. Model R Sterling—This engine can be bought for less than cost of new parts recently installed by owner. Best buy listed by any agency. Stauffer, Eshleman & Company, Ltd., New Orleans, La.

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### Opportunities for the Motor Boatman

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR Boating.



45 ft. x 10 ft. 6 in. V-bottom express cruiser from design by Wm. H. Hand. Model "FM" 6 Sterling motor. The boat is elaborately finished to the minutest detail. This boat was delivered late last season to a party in Norfolk, Va., but due to an unexpected turn in his finances, we yet have considerable interest in the boat. She is now being offered for sale at a sacrifice price. The outfit is really better than new, as "All Bugs" have been worked out, and you save the 10% Excise Tax. The boat is in commission, and can give demonstrations. Richardson Boat Co., 370 Sweeney St., North Tonawanda, N. Y.



No. 460—Lawley bridge deck seagoing cruiser. 46 o. a.,  $\frac{9}{2}$  beam, 3.3 draught. Fine cabin for 4 people. 40 Murray & Tregurtha engine, new 1919. Speed 12 miles per hour. Electric lights. One of the few really high grade craft of size and type available at attractive price. Further details from SIMON FISCH, Yacht Broker, 185 Madison Avenue, New York. Telephone Vanderbilt 6717.

Auto Motor Supplies—Buick—Michigan—Standard Dayton—Cadillac—Overland—E.M.F. Continental and Buda Motors, all types \$50 each and up. Special high tension 2 and 4 cylinder Magnets \$9.50 each. Electric and Gas Head Lamps—Cells—Carburetors—Air Compressors—Generators—Starters, etc. Write for info catalogues. Address Motor Sales Dept. B, West End, Pittsburgh, Pa.

Skandia Marine Oil Engine, 55 B. H. P., 2 cylinder, 2 cycle, complete with air starter tank, fuel, bilge and circulating pumps, muffler, fuel oil strainer, thrust bearing and usual spare parts and accessories. The engine is absolutely new, never been uncrated, was bought for foreign account; outfit represents a cost to us of \$5,750.00, but we are willing to consider offers from interested parties. Engine is now in our warehouse in Brooklyn, Shipley Construction & Supply Company, 42nd St. & 2nd Ave., Brooklyn, New York.

For Sale—1 2 KW. direct connected Carlisle & Finch electric outfit, with arc search lamp. Percy M. Child, 1110 14th St., N.W., Washington, D. C.

For Sale—40 ft. 5 in. x 6 ft. 9 in. mahogany runabout "Chinook" speed 25 M.P.H. Equipped with six cylinder  $\frac{5}{8}$  x 6 Van Blerck engine, electric starter, generator, electric lights, windshield, upholstered seats, top and curtains. Boat is in excellent condition and immediate shipment can be made to any point desired. Value \$7,500.00; will sell for \$5,000.00. Address Winton Engine Works, Cleveland, Ohio.

TRIMOUNT WHISTLE BLOWER ROTARY HAND OUTFITS BILGE PUMPS  
Blower runs by friction. All bronze composition, contact with engine fly-wheel. Whistle of brass, nickel-plated. Made in 3 sizes. Made in 3 sizes.

TRIMOUNT ROTARY POWER CO.  
20 Heath Street Boston, Mass.  
(Factory: 292 Whiting Ave., E. Dedham, Mass.)



For Sale—Fast 40 foot express cruiser in commission. Equipped with 8 cylinder racing type Sterling engine. Electric starter. Speed up to 35 miles. Price reasonable. Karl Farkas, 45 Richmond St., Providence, R. I.

For Sale—150 H.P. 8 cylinder racing type Sterling engine. Equipped with electric starter and reverse gear. Make offer. Karl Farkas, 45 Richmond St., Providence, R. I.

Wanted—Power cruiser 36-40 feet, 8-12 miles max, speed not over six years old. Fully found and in first class condition. Will pay reasonable price for a used boat based on before war cost. Also consider auxiliary yawl. Submit full details, specifications and where may be inspected. Address—W. S. Kimball, 5915 Center Avenue, East Liberty, Pa.

75 horsepower four cylinder four cycle marine engine, weight 1200 pounds. Fine condition. Bosch magneto. Suitable for express cruiser or runabout, \$250.00. Reliance Motor Boat Co., 207th St., West of Broadway, N. Y. C.

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Rebuilt Engines in stock for Immediate Delivery to Power Your Motor Ship Yacht or Tender. Write or wire us to hold the Engine you select. Our price is right in comparison to rebuilt Engines.

	H.P.	Inches	Cyl.	Price	
Standard	300	10	10 $\frac{1}{2}$	\$4,000.00	
Standard	100	8	10	2,800.00	
Standard	75	8	10	2,200.00	
Standard	37	6	8	1,160.00	
Graig	300	11	15	2,600.00	
Pair				5,000.00	
Graig	125	11	15	2,000.00	
Graig	120	6 $\frac{1}{2}$	7	1,600.00	
Graig	21	5 $\frac{1}{2}$	6	360.00	
Speedway	60-75	6	6	1,160.00	
Globe	24	7	9	400.00	
Automatic	37 $\frac{1}{2}$	7 $\frac{1}{2}$	9	1,000.00	
Automatic	18-21	5 $\frac{1}{2}$	7	660.00	
Eagle	24	6	7	460.00	
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Morse	20	6	6 $\frac{1}{2}$	2	460.00
Wolverine	16	6 $\frac{1}{2}$	7	2	800.00
Rockaway	40	6	6	500.00	
New York	40	5 $\frac{1}{2}$	6	4	560.00
Trebert	24-30	5 $\frac{1}{2}$	6	600.00	
Trebert	16-20	4 $\frac{1}{2}$	5	4	380.00
20th Century	12	5 $\frac{1}{2}$	6	300.00	
Hall	12	5 $\frac{1}{2}$	6	2	300.00
Buffalo	24	5 $\frac{1}{2}$	6	4	460.00
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Above Engines will be full outfit as Propeller—High tension Ignition—carburetor—oiling system—Reverse gear—complete from Flywheel to coupling. All above Engines are of the 4 cycle type, 2 cycle reversible type Standard made Engines.

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16	H.P. Lathrop	2 cyl.		275.00
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		2 cycle reversible type.		
6	H.P. Lathrop			100.00
		2 cylinder 2 cycle.		

15	H.P. Knox			240.00
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11	H.P. Gray			190.00
10	H.P. Brown, New			245.00
12	H.P. Universal			200.00
		3 cylinder 2 cycle		

21	H.P. Fairbanks			260.00
17 $\frac{1}{2}$	H.P. Ferro			190.00
17 $\frac{1}{2}$	H.P. Ferro			150.00
18	H.P. Fairbanks			210.00
		One cylinder		

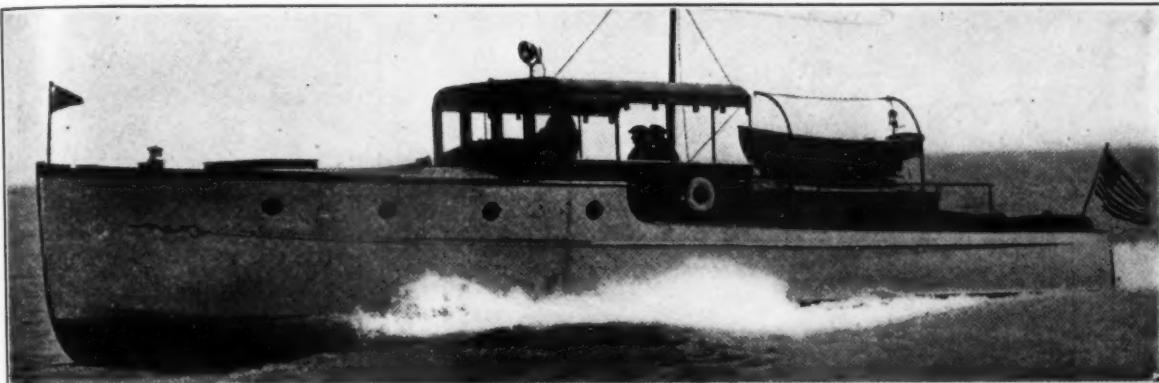
7 $\frac{1}{2}$	H.P. Mianus			110.00
5	H.P. Mianus			76.00
3	H.P. Mianus			56.00
5	H.P. Fairbanks			60.00
6 $\frac{1}{2}$	Bridgeport			100.00
4	H.P. Palmer			60.00
1	H.P. Ball			35.00
9	H.P. Bridgeport Hoist			200.00
20	H.P. Mianus, 2 cyl.			360.00
15	H.P. Mianus, 2 cyl.			260.00
12	H.P. Mianus, 2 cyl.			240.00
10	H.P. Mianus, 2 cyl.			200.00
8	H.P. Mianus, 2 cyl., Old style			140.00

## THE MOTOR BOATING MARKET PLACE

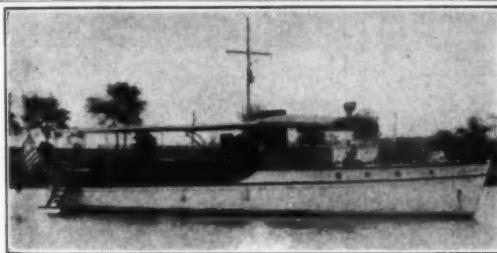
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 Terms: Cash with order

### Opportunities for the Motor Boatman

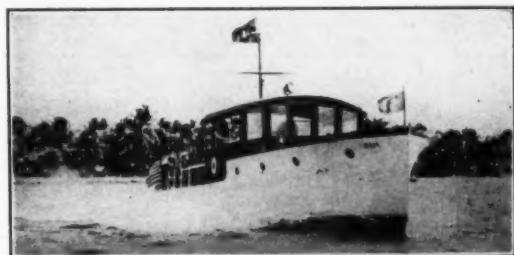
Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR BoatinG.



No. 7265—For Sale—50 ft. Great Lakes express cruiser. Van Blerck motor, electric starter and lighter, bridge control. Speed 22 miles. Brand new, never used, except for trial trip. In cradle, ready for immediate shipment. Photograph gives fairly good idea of type of craft but is not exact photograph of this particular boat. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



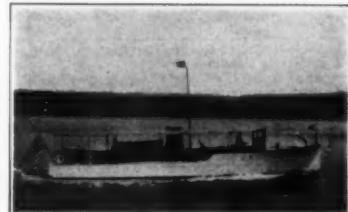
No. 364—For Sale—One of the finest modern bridge deck coast cruisers now offered. 60 o. a., 12 beam, 4 draught. Fine owner's stateroom. Large main saloon. Bath room. High grade construction throughout. 65 H.P. "20th Century" motor, new 1916; put in absolutely perfect shape 1920. All conveniences. Full cruising inventory. Whole outfit good as new. Price attractive. For full information address SIMON FISCH, Yacht Broker, 185 Madison Avenue, New York. Telephone Vanderbilt 6717.



For Sale—52 ft. cruiser, 11 ft. 6 in. beam. Powered with a 200 H.P. Model F-S Sterling motor. Speed 18 to 20 M.P.H. Fully equipped. For further particulars write, Hutchinson Brothers, Alexandria Bay, N. Y.



No. 7543—For Sale—45 ft. Hand V-bottom express cruiser. Built 1920. Sterling engine. Outfit in excellent condition. Henry J. Gielow, Inc., 25 W. 43rd St., New York City.



No. 2597—For Sale—Fast twin-screw motor yacht, 60 x 11 x 3 ft. Two 8 cylinder motors. Speed up to 25 miles. Excellent cruising accommodation. Should be seen to be appreciated. Located near New York. Cox & Stevens, 15 William St., New York.

Practically new one right hand and one left hand latest type 4-cylinder 50 H.P. Standard engines,  $6\frac{1}{2}$  in. bore, 8 in. stroke. These engines are the new type Standard with the mechanically operated overhead valves. Engines have been used about 108 hours last summer, have had best of care and are in better condition than when new. Completely equipped with two sets of ignition (Atwater-Kent and magneto), bilge pumps, air pumps, electric starters and generators, vacuum pumps for gasoline feed and two propellers and propeller shafts. Very complete equipment. Address Geo. W. C. Drexel, 212 South 7th Street, Philadelphia, Pa.

For Sale—Boat building, repairing, winter storage yard. New building shop, 2 railways, boats,  $1\frac{1}{2}$  ton truck. New 7 room residence, all improvements, furniture, electric washer, ironer, grill, sweeper. Near 2 yacht clubs, 25 miles New York. Part cash. Owner going to Pacific coast. Address Boat Yard, care of MoToR BoatinG.

For Sale—Cabin cruiser—ocean going. Flush deck, 52 ft. x 11 ft. x 4 ft. Heavy duty Standard engine. Two lavatories. Two cabins. Mahogany trim. Attractively furnished. One man control. \$6,000.00. A. E. Paradine, 38 Munro Pk. Ave., Bronx, N. Y.

For Sale—House boat, 18 x 50. Built 1919. Of best materials. Exceptionally good workmanship throughout. Is furnished for five. Can easily take care of ten persons. Ideal for summer parties or to live on. This boat can be bought for \$1500.00 and can be seen at Morehead City, N. C. Photograph on request. E. A. Jackson, Jr., Asheville, N. C.

Put a Hall-Scott aviation engine in your boat. High power, light weight. Have two, can only use one. 4 cyl.  $5\frac{1}{2}$  in. by 7 in., 100 B.H.P. at 1400. Under 500 pounds. Practically new. This type motor has been successful in boats. \$550 for quick sale. J. L. Jervis, 1327, Utah St., San Francisco, Calif.

Bargains—Brand New Engines—Following engines guaranteed brand new. Offered practically as cheap as second hand engines. 4 brand new Peerless 25-35 H.P., complete equipment, electric starting lighting, enclosed flywheel, magneto, carburetor, lubricator, reverse gear, kerosene attachment, propeller, shaft, stuffing box, stern bearing. Boxed for shipment. Suitable for cruiser or workboat. 3 brand new Van Blerck 8 cylinder 6 in. x 6 in., 150 H.P., 950 revolutions, complete engine equipment, electric starting lighting, storage battery, extra kerosene carburetor, governor, etc. Boxed for shipment. 2 brand new Skandia oil engines, 120 H.P., two cylinder, 200 revolutions, reverse gear. Suitable for workboat, auxiliary or heavy cruiser. Write for specifications and prices. Louis C. Eitzen, 280 Broadway, New York, N. Y.

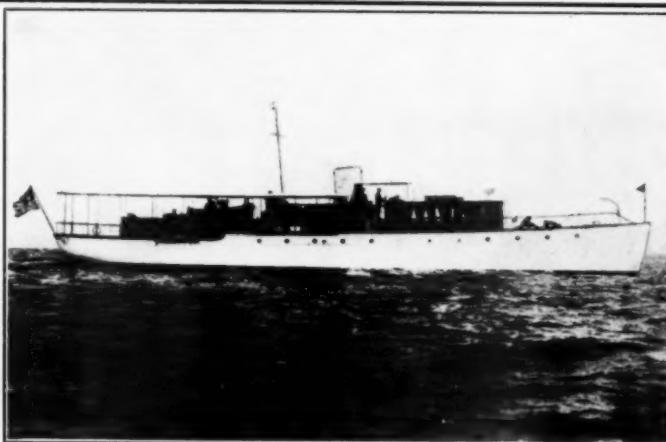
For Sale—Two cylinder, 36 H.P., two cycle Kahlenberg engine. A-1 condition. Complete with spare parts, clutch, shaft, stuffing box, propeller. Box 91, MoToR BoatinG.

## THE MOTOR BOATING MARKET PLACE

The rate for "For Sale" and "Want" advertisements is 6 cents per word, minimum \$1.50. If an illustration is used, the charge is as follows, which includes the making of the cut:  
 Cut one inch deep, one column wide..... \$5  
 Cut 1½ inches deep, 1½ column wide..... \$10  
 Cut 2½ inches deep, three columns wide..... \$20  
 Terms: Cash with order.

### Opportunities for the Motor Boatman

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR BoatinG.



No. 463—For Sale—Steel, twin-screw cruising power yacht; 110 x 17.6 x 6 ft. Speed up to 14 miles. Two 100/125 H.P. air starting reversible Standard motors. Accommodations include large deck house forward containing dining saloon, main saloon, two double and two single staterooms, bathroom, two toilets. Interior finish mahogany and teak. Good deck space. Handsomely finished and furnished. Price and further particulars from Cox & Stevens, 15 William Street, New York.



No. 495—For Sale—Brand new express cruiser. 32 o. a., 9 beam, 3 draught. Cabin berths 4. Headroom 6 ft. 4 in. 35-55 Sterling with electric self starter—complete outfit. Speed 17 miles per hour. Full inventory—tender. Has proven very satisfactory, demonstrating excellent seagoing qualities at minimum up-keep cost. Original cost \$6,700. Only offered as owner desires to build larger similar craft. Bargain for quick sale. Address SIMON FISCH, Yacht Broker, 185 Madison Avenue, New York. Telephone Vanderbilt 6717.

For Sale—35 ft. runabout. Speed 15 m.p.h. 40 H.P. Scripps motor. Electric starter, electric lights, auto control, wicker chairs, auto top. First class outfit, nearly new. Write for further details. Price \$2500.00. James F. Cummings, 59 Haverhill St., Boston, Mass.

Wanted—2 cyl. 3 H.P. Koban Outboard engine. In reply, state full particulars as to condition. Year manufactured, make of carburetor, and lowest price for cash to Box 11, MoToR BoatinG.

#### EXCEPTIONAL OPPORTUNITY TO BOATMEN

We take pleasure in announcing that we are placing on the commercial market a limited quantity of Calking Tool Sets, manufactured on contracts for the U. S. Government, which were cancelled upon close of War. By placing an (X) opposite the set desired and tearing out this advertisement attaching to same a small slip with your name and address, we will send you either at the special price of \$5.00—unless a F. O. Money Order accompanies this we shall understand that you wish this set by Express C.O.D. . . . Wood Set, consists of six full polished tools as follows: One each, Calking Iron, Making Iron—single crease, Making Iron—double crease, Bent Spike Iron, Straight Spike Iron, Reefing Hook. . . . Metal Set, consists of twelve natural finish tools as follows: One each, Flat Chisel, Cape Chisel, Diamond Chisel, Gouge Chisel, Rivet Tool, Side Chisel, Splitting Tool, Calking Tool, Fuller, Butt Tool, Bent Fuller, Bent Splitting Tool. Each Set put up in neat wooden case with sliding top, stained and varnished.

EACH SET IS COVERED BY OUR GUARANTEE THAT IF ANY TOOL PROVE DEFECTIVE IN EITHER MATERIAL OR WORKMANSHIP WE WILL REPLACE SAME UPON RETURN TO US WITHOUT COST. Buffum Tool Co., Louisiana, Mo.



For Sale—New Hand V-bottom runabout, 25 ft. x 6 ft. x 22 in. draft. Canvas decks, batten seams, white oak frame, pine planking ¾ in. thick. Four cylinder four cycle motor. Bosch dual magneto, bulkhead controls. Will sell for highest bid with or without motor. Also have several other open and closed boats from 20 to 35 ft. For full particulars apply to Geo. W. Boulden, Elkton, Md.

FOR SALE—30 ft. raised deck cruiser, built 1916; new engine. 36 ft. bridge deck cruiser, built 1917; engine A-1. 45 ft. bridge deck cruiser, built 1919; new engine. 52 ft. twin express cruiser, built 1917; 400 H.P. Others up to 130 ft. w.l. Also special list of Aux-yawls. STRONG & BEEKMAN, 29 Broadway, New York.

Wanted—Cabin cruiser to accommodate four persons. Give price, condition, dimensions, equipment. Must be seaworthy. Wm. B. Forman, Canajoharie, N. Y.

KERMATH MOTORS—WE WILL TAKE ANY MOTOR IN TRADE ON A NEW KERMATH. GET OUR SECOND HAND LIST. KERMATH MFG. COMPANY. (Detroit, Mich.)

	One cyl. two cycle	Two cyl. two cycle	Four cycle engines
5 H.P. American, new.....	\$65.	20 H.P. Gray, 5¾x5.....	6 H.P. New, Imperial,
6 H.P. Gray, new.....	105.	18 H.P. Kahlentz, 7x7.385.	one cyl. .... \$155.
7½ H.P. Fairbanks, 5½x6½.....	95.	15 H.P. Ferro .....	8 H.P. Dun, 2 cyl. .... \$15.
10 H.P. Gray, 5¾x5.....	135.	18 H.P. Fairbanks .....	12 H.P. Globe with gear,
		18 H.P. Uncle Sam.....	2 cyl. .... 195.
		26-36 H.P. Barber .....	14 H.P. Wolverine with gear, 2 cyl. .... \$15.
5 H.P. Palmer .....	\$60.	Four cyl. two cycle	16 H.P. New, Dunn, 4 cyl. .... 135.
7½ H.P. Roberts .....	65.	20 H.P. Roberts .....	20 H.P. Buffalo, 4 cyl. and gear.... 285.
10 H.P. Atlantic .....	70.	24 H.P. Gile .....	25 H.P. Doman, 4 cyl. and gear.... \$15.
12 H.P. Fairbanks .....	85.	24 H.P. Fairbanks .....	and many others. We buy and trade Motors.
15 H.P. Fairbanks .....	105.		BADGER MOTOR COMPANY, MILWAUKEE, WIS.

*We are offering our complete stock of REBUILT MOTORS at a*

# 20% REDUCTION

*from the prices as formerly advertised*

This represents in some cases a saving of almost 70% over the price of the same motor new.

These machines are all rebuilt in our own shops under our direct supervision, by experts, and we will positively maintain our present high standard of rebuilding. We sell these motors with an IRON-CLAD GUARANTEE and our enormous stock allows us to properly power any size or type of boat—from the miniature dinghy to the palatial yacht or heavy work-boat.

Place your order now and avoid delays. We will hold machines bought now for spring delivery.

Write us for our rebuilt list—it will be sent anywhere on request.

We also are distributors of and carry a stock of the following high-grade NEW motors—the finest built in this country:

Sterling	Kermath	Murray & Tregurtha	Missouri
Gray-Prior	Peerless	Wolverine	Roberts
Hartford	Waterman	Doman	

# BRUNS, KIMBALL & CO.

153-155-157-159 West 15th Street,

NEW YORK CITY

Phone: Watkins 467

Branch Showroom: Bourse Building, Philadelphia, Pa.

## THE MOTOR BOATING MARKET PLACE

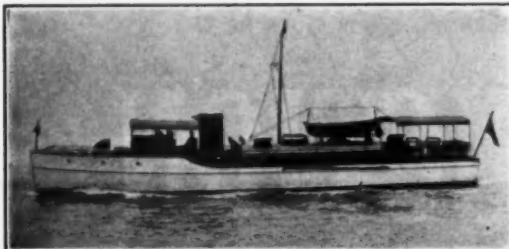
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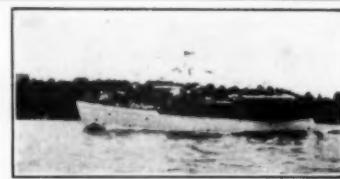
For Sale—Yacht Celeritus, 61 ft. O. L. x 11 ft. 6 in. x 3 ft. 9 in. Designed by Sweeny. Built by Jacobs 1916. Redesigned 1919. Motors overhauled 1920. Power plant, two Sterling eight cylinders 150/200 H.P. each. New power dingey built 1920. Perfect order. Complete inventory. Price low. Apply Oliver, 417 Canal Street, New York.



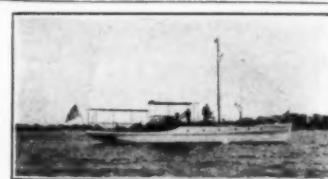
For Sale—Cruiser 51 x 10 x 3 ft. raised deck. Speed 12 miles. Built by Model Yacht Works. Speedway engine. Fully equipped and in fine condition. Wm. A. Molter, Springfield, N. J.



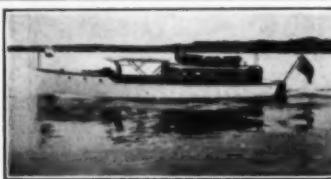
No. 1028—For Sale—Express runabout, built 1916, 30 x 5.9 x 2 ft. 50-75 H.P. Sterling engine amidships. Small cockpit seating 3 forward; seats 5 aft. Speed 16-22 miles. Very able for boat of this type and in exceptionally fine condition. Apply John G. Alden, 148 State St., Boston, Mass.



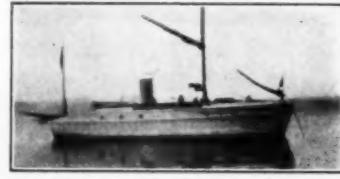
No. 1586—For Sale—45 ft. day cruiser. Heavy duty Murray & Tregurtha engine. Apply John G. Alden, 148 State St., Boston, Mass.



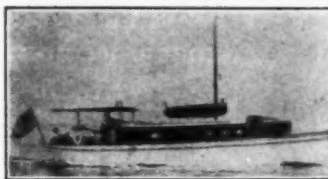
No. 1775—For Sale—Raised deck cruiser. 59 x 11.7 x 4.6 ft. 37 H.P., 4-cycle Standard engine. Speed 11 miles. Electric lights. Double stateroom, 3 berths in main cabin, 2 for crew, galley forward. Interior finish mahogany and white. Thoroughly overhauled and refinished inside and out 1920. Full equipment, including cedar and mahogany tender on davits. Very able and comfortable cruiser with unusual amount of deck room. Apply John G. Alden, 148 State St., Boston, Mass.



No. 1784—For Sale—Day cruiser, built 1914, 44 x 10 x 2.6 ft. 60 H.P. Holmes engine. Cruising speed 10 miles. 2 extension transoms forward; large cockpit; engine in after house, also toilet room, galley and crew's stateroom. Apply John G. Alden, 148 State St., Boston, Mass.



No. 1774—For Sale—Bridge deck cruiser, 40 ft. x 10 ft. x 3.6 ft. Heavily constructed by Britt Brothers, 1913. Copper sheathed. Thoroughly overhauled and equipment renewed 1920. 25-30 Sterling. Speed 8 knots. Saloon forward. Double stateroom aft. Large galley and engine room. Sleeps six. Apply John G. Alden, 148 State St., Boston, Mass.



No. 2814—For Sale Trunk cabin cruiser, 43 x 7 x 3.6 ft. draft. Designed and built by the New York Yacht Launch & Engine Co. 18/24 H.P. 20th Century motor. Speed 9-10 miles. Boat is fully equipped and can be placed in commission at small cost. Located near New York City. Price attractive. Cox & Stevens, 15 William Street, New York.



No. 1817—For Sale—Express runabout, built late 1919 for N. Y. Motor Boat Show. 28 x 6 x 2 ft. 100 H.P. Wisconsin motor. Used one season. Fine condition. Apply John G. Alden, 148 State St., Boston, Mass.



No. 18—For Sale—Handsome Lawley built bridge deck cruiser, 52 x 8.9 x 4 ft. 75 H.P. Buffalo engine. Speed 12-16 miles. Roomy bridge, large cockpit, 3 berths in main cabin. Interior finish mahogany. Hull, engine and equipment put in best of condition 1920. Apply John G. Alden, 148 State St., Boston, Mass.



No. 331—For Sale—Here is an opportunity to secure high grade cruiser at very attractive price. 37 x 9.3 x 3; built 1912. Separate stateroom and cabin berth 4 people comfortably; toilet and galley either side accessible from both compartments. Headroom 6 ft. 16-20, 4 cycle Palmer. Elegant inventory. Whole outfit first class. Inspectable near New York. Will be sold at lowest price of any similar craft available. Address SIMON FISCH, Yacht Broker, 185 Madison Avenue, New York. Telephone Vanderbilt 6717.



No. 1746—For Sale—High grade day cruiser, 30 x 9 x 3 ft. Built 1918 by Crosby and little used. 40 H.P., 6 cylinder Scripps. Speed 10-14 miles. Cabin with 2 transom berths and toilet. Large, comfortable cockpit with chairs and cross seat. Mahogany finish; brass fittings. Apply John G. Alden, 148 State St., Boston, Mass.



No. 745—For Sale—V-bottom, bridge deck cruiser. 55 x 10.6 x 3.6 ft. Built 1917. Two 35-55 Sterling engines installed 1920. Speed 13-15 miles. Large forecastle with 3 pipe berths and toilet. Saloon with 2 berths and toilet room. Engine room under bridge deck. Double stateroom and toilet room aft. 2 tenders carried on davits. A-1 condition throughout. Apply John G. Alden, 148 State St., Boston, Mass.

For Sale—26 x 8 x 3 Cedar & Bright finished family launch. 12 to 15 H.P. 2 cylinder, 4 cycle Sterling engine. Practically new. Located at Tom's River, N. J. To be sold for the best offer. W. W. Smithers, 402 Finance Building, Philadelphia, Pa.

Wanted—Cruiser 45 to 60 feet long. Must be first class boat. Speed 12 miles or over. Send me particulars. L. Cook, 1918 Sunnyside Ave., Chicago, Ill.

Wanted a sea sled, 22 or 30 feet. Speed 25 miles. Must be in A1 condition. H. I. Underhill, South Orange, N. J.

For Sale—45-75 H.P. 6 cylinder Sterling motor. Only used a few times; in best of condition. Fully equipped with magneto, starter, generator and reverse gear. \$1400.00. Reply MoToR BoatinG, Box No. 69.

## NAVAL ARCHITECTS & YACHT BROKERS

**JOHN G. ALDEN**  
YACHT BROKER AND  
NAVAL ARCHITECT

MARINE INSURANCE  
148 State Street  
BOSTON, MASS.

**Thomas D. Bowes, M. E.**  
NAVAL ARCHITECT AND ENGINEER  
Offices:  
Lafayette Bldg., Chestnut and Fifth Sts.  
PHILADELPHIA, PA.

**COX & STEVENS**  
Engineers and Naval Architects  
Yacht Brokers  
15 WILLIAM STREET, NEW YORK CITY  
TELEPHONE 1375 BROAD

**WAVE COLLECTING**  
Runabouts—Rowboats—Cruisers  
SPECIAL 17' HYDROPLANE  
Build your own boat from my plans, full  
size paper patterns or semi-erected frames.  
17 years' practical experience  
LOUIS E. GERMAIN, N.A.  
600 N. Andre St. Saginaw, Michigan

**William H. Hand, Jr.**  
NAVAL ARCHITECT  
NEW BEDFORD, MASS.  
HAND-V-BOTTOM DESIGNS  
Send stamps for latest catalog.

**FREDERICK K. LORD**  
NAVAL ARCHITECT  
120 BROADWAY NEW YORK

MONTREAL  
288 St. James St.  
Telephone Main 3352

NEW YORK  
288 State Street  
Telephone Bowing Green 6077

**N. E. McCLELLAND & CO., Ltd.**  
NAVAL ARCHITECTS  
SURVEYORS — YACHT BROKERS

**CHARLES D. MOWER**  
Designer of  
SENSIBLE CRUISERS  
POWER—SAIL—AUXILIARY  
Twenty-five years' practical experience  
88 Madison Avenue New York City

## MOTOR BOATING

### Yard and Shop

(Continued from page 44)

### A. C. Maynard Goes to South America

A. C. Maynard of the Maynard-Adams Engine Company, Berkeley, Cal., has left for a three months' trip to South America to stimulate trade and place agencies for the Maynard-Adams engines. They report an excellent export trade on these engines.

### Kermath Service

In one of the most important territories where Kermath motors are distributed by Bruns Kimball Company, New York, it recently happened that due to freight congestion it was impossible to ship motors from the factory expeditiously. A customer in urgent need of a 20 h.p. Kermath was unable to be supplied on account of this congestion. In order to help him out of his difficulties a motor was built for him in the shops of Bruns Kimball & Company out of their ample stocks of spare parts for this motor. Every part used in the manufacture of the machine was taken from the cabinets and assembled and when the motor was completed it ran as well as any which the factory was able to turn out. The ample supply of Kermath parts carried in New York always enables Kermath users to be promptly served with the necessity arises.

### Have Confidence in Business

While many concerns have curtailed production during the past few months, owing to their fear of future business, the Skaneateles Boat & Canoe Co., of Skaneateles, N. Y., have evidently no feelings in common with manufacturers who feel this way. For twenty-eight years this company has been booked with orders for months ahead, and last summer a radical plan was decided upon. Adjoining property was purchased and the plant was over doubled in size. Approximately \$50,000 was spent to put the plant on a standard production basis, and boats of all classes are built in large numbers. Every inch of the present plant is utilized in the production of boats and on June 1st of this year this company will have approximately \$100,000 worth of skiffs and rowboats on hand for the summer business. During the present year more buildings will be added to make room for more employees. It is only when boats are manufactured on a large scale that the price can be brought to a minimum.

### Adventurer Wanted

A chance to journey to San Francisco via the Panama Canal on a small yawl is open to an adventurous spirit about 25 years old. A start will be made early in April and a lover of the sea with a companionable disposition is wanted. The expenses of the trip will be moderate and a delightful vacation is offered. Interested adventurers should communicate their experience and qualifications to Box L, c/o Motor Boating, 119 W. 40th St., New York City.

(Continued on page 62)

## FREDERIC S. NOCK

### NAVAL ARCHITECT

Yacht Builder, Marine Railways,  
Storage and Repairs

East Greenwich, Rhode Island, U. S. A.

What do you want—What have you?

**C. S. SPONAGLE**

Yacht Brokerage and Insurance  
Commercial Boats  
Competent Crews Furnished  
88 Broad Street Boston, Mass.

### Boat Headquarters in Baltimore

For quick action list  
your boat with us.

**STALEY'S YACHT AGENCY**  
Yacht and Ship Brokers  
106 N. Charles St., Baltimore, Md.

### STRONG & BEEKMAN

Yacht and Ship Brokers  
29 Broadway New York  
Yachts—All Types, Sale or Charter  
Also Commercial Vessels  
Tel.: Whitehall 537 Cable: "Strobick"

  
Sixteen Years  
Designing  
Experience  
Specialty  
Seagoing Yachts  
110-Ft. Yacht "CONSUELO" Seagoing Yachts  
**J. MURRAY WATTS, N. A.**  
136 South Fourth St. Philadelphia  
Phones: Lombard 2072

### 4-Cycle Engines of Quality

Six sizes—light, medium, and medium heavy duty. 3 h.p. to 20 h.p.—1 to 2 cylinders. Gasoline or kerosene. Suitable for workboats, fish skiffs, sampans, pleasure boats, etc. Working parts on lightweight models, interchangeable with Ford engine parts.

Live agents wanted in all parts of the world  
**SEATTLE-STANDARD ENGINE MFG. CO.**  
Seattle, U. S. A.

### HONEST CLAY Heavy Duty Engines

Powerful slow speed four cycle engines for heavy craft and work boats. The product of 22 years' experience. One, two and four cylinders—6 to 50 H.P.

Write for Catalog  
**THE CLAY ENGINE MFG. CO.**  
664 East 72nd Street Cleveland, Ohio

### Wanted Live Salesmen Who Must Make Money

This is a big manufacturing concern. They have a new type of cooking stove for motor boats and yachts. This stove is in a class by itself and sells on sight. Hundreds of boat owners have already installed it and these owners are its best boosters. If you have the credentials to prove you are a "live" salesman write, giving experience and other information of interest.

**SHERMAN & LEBAIR, Inc.**  
Advertising Agency  
116 West 32nd Street, New York

STEARNS-MCKAY

# MARBLEHEAD ANTI-FOULING GREEN BOTTOM PAINT



STAYS CLEAN FOR STEEL OR WOOD

EFFICIENCY & ECONOMY

## MARBLEHEAD SEMI-ENAMEL YACHT WHITE FOR TOPSIDES AND INSIDE FINISH

### STEARNS MCKAY MFG. CO.

MARBLEHEAD, MASS. U.S.A.

#### *Yard and Shop*

(Continued from page 61)

#### *Yachting in Chicago Threatened by Action of Park Commissioners*

The development of yachting in Chicago will be greatly retarded by burdens to be placed upon the sport through the medium of special taxes to be imposed by the Park Commissioners who have recently issued an edict to the owners of motor and sail boats moored in Jackson Park that hereafter they will not be permitted to occupy moorings in the yacht harbors except upon payment of sums varying from \$15.00 to \$40.00 per season. The length of the season is usually about five months. The class of boatmen who have heretofore availed themselves of the free mooring privilege cannot bear the burden of this special tax in addition to the Government war tax on pleasure boats. The announced policy of the Park Commissioners will discourage the growth of this most healthful of all sports. The yachtsmen of Chicago feel that they are being discriminated against, as no tax is placed upon the use of special driveways by automobiles nor upon other forms of recreation now free to the general public through the agency of the various Park Commissions.

As the development of waterways in this country is a very live issue at the present time, the yachtsmen feel that everything possible should be done by public bodies in the interest of that development by giving the owners of pleasure boats every opportunity to make use of the natural advantages they possess. The Chicago slogan of "Boost the Lake Front Improvement" loses its charm to the yachtsmen if they are going to be specially taxed for the development of the so-called peoples' playground. Development of

yachting is a national asset, as was so well proven in the performance of our boys who manned the sub-chasers during the World War and drove the German submarines to cover. A great number of the commanders of these vessels owned and sailed pleasure boats on the Great Lakes before the war.

#### *Canadian Company Opens New York Branch*

George I. Gilbert, for twenty years a designer and builder of high-class boats in the United States and Canada, has opened offices at 118 West 125th Street. Mr. Gilbert is now building a complete stock of 18-foot Gilbert specials, 26-foot mahogany family runabouts, 16 miles speed, 30-foot mahogany runabouts, 20 miles speed, and 35-foot mahogany runabouts, 35 miles speed.

It is also proposed to carry in stock a 26-foot cruiser, which will be complete in every detail. Mr. Gilbert will personally supervise every possible detail entering into the design and construction of his boats. He is also offering a unique service to the man who will build his own boat through the sale of plans at a nominal figure, which includes lines, plans, profiles, as well as full-size details of all frames.

#### *New Ball Bearing Generator*

The Comet Electric Company of Indianapolis, Indiana, are building high-grade ball-bearing lighting generators expressly for the motor-boat trade, which should find a good reception. B. E. Avey, in charge of production, is an experienced electrical man and has been affiliated with the magneto field since its inception. He has designed the Comet Set to give maximum efficiency with the minimum number of working parts.

**Marine Hardware and Supplies**  
In planning the spring overhaul, our catalogue will help you select the right equipment. Prompt Delivery—Right Prices.

**W. & J. TIEBOUT**

Established 1853—Incorporated 1892

118 Chambers Street

New York City

Advertising Index will be found on page 130

#### *To Launch a Beached Boat*

(Continued from page 34)

three feet under the ground and it will hold most anything.

When the boat has rolled off of one roller it should be carried back and shoved under the stern, the other rollers will hold the stern up high enough to get it under. When the boat has gone past one set of planks they should be laid down in back of the boat and thus form a constant runway.

A job like this for only a moderate distance will take a couple of hours, and you can repay your helpers by giving them a ride after the boat is launched.

E. H. T., Oak Park, Ill.

#### *The Way We Would Do It*

(Continued from page 36)

wood alcohol and will function in the same way. It will be unnecessary to use vinegar if the alcohol is used. After the wood is thoroughly dry, it can be sanded smooth again. Should it be desired to color the wood an oil stain may be applied with a brush and after several hours wiped thoroughly with cheese cloth. Be careful not to apply the stain too heavily and do the wiping with care as it brings out the grain of the wood. We are now ready for the varnish which should be applied in a thin coat. After this is dry it should be sandpapered lightly and the next coat applied. Three coats should be sufficient to give a good body. A gloss effect is obtained by flowing on the last coat and if a dull finish is desired it is rubbed with pumice and water. Only the best varnishes should be used for outside boat work and varnish should never be applied when the weather is cold or damp. Best results will be obtained by working on a clear, sunny day.

#### *Build a Boat*

(Continued from page 37)

motor selected. A shaft-log is supplied and securely bolted to the keel assembly, a canvas gasket laid in white lead being placed between. The stuffing box is attached to the forward end of this log and the shaft hole can be lined with a piece of lead pipe of proper size flanged over at both ends in order to make a water-tight job. Although the drawing does not show an outboard keel a deadwood can be built up and attached to serve as a bearing for the outboard end of the propeller shaft. If preferred, a small metal strut can be supplied to hold the end of the propeller shaft securely. The location of the tank and ignition equipment will be left to the individual, as there are several places where these can be disposed of.

An outboard rudder of the accepted type can be hung on suitable pintles and arranged so as to be detachable if necessary. Painting and finishing can be done to suit the requirements for which the boat is intended and when completed this little boat will be well worth the effort spent in constructing it.

#### *The Engine Everybody Wanted*

A well-known boatman saw the Michigan Marine Motor and after a demonstration said: "That's the engine I've been looking for for years. A four-cycle single-cylinder engine that don't weigh a ton will start every time and stay running, either for trolling or full speed, with the possibility of repairs at any Ford garage. It's the ideal sportsman motor." He knew that we had hit the nail on the head for the Michigan Motor is all of this and more.



## "ADIEU" WINS THE FISHER TROPHY

THE VICTORY of this 32 foot Hacker - built wonder - craft, in three of the most hotly contested heats of a major motor boat race ever run, conclusively demonstrates the all round superiority of Hall - Scott marine engines.

It was a clean cut, convincing victory, over last year's champion, a practical demonstration of the remarkable Stamina, Power and Efficiency of the Hall - Scott.

The engine which powered "Adieu" is a Hall - Scott six cylinder of only 5" bore and 7" stroke, and a total cylinder capacity of 25% smaller than that of any other engine in the race, but,

One Hall - Scott six was enough to win.

Hall - Scott marine engines have Stamina as well as Speed. Their wonderful record of 1920 is still unbroken—not a single bearing, connecting rod, piston, cylinder, crank shaft, or other major part lost during the entire season.

You should own a Hall - Scott. We have duplicates of "Adieu's" engine in stock. Have us reserve one for you.

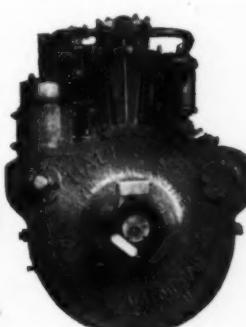
Write to-day for booklet "Hall - Scott Powered Boats."



*The \$5000 Gold Fisher Trophy,  
emblematic of the American Power  
Boat Association Displacement Cham-  
pionship.*

*Won by "Adieu," 32<sup>1</sup> x 6<sup>1</sup> 6<sup>1</sup>  
runabout. Built by the Hacker Boat  
Co., Detroit, Mich. Owned by Mr.  
Webb Jay, Chicago, Ill.*

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# Complete Summary of Second Race for Fisher Trophy

Representing American Power-Boat Association Displacement Boat Championship, Miami, Fla., February 10, 11, 12, 1921, Three Heats of 50 miles each. Open to displacement runabouts of over 32 feet in length powered with one or more stock marine motors

TOTAL RACE 150 Miles		1st HEAT 50 Miles			2nd Heat 50 Miles			3rd Heat 50 Miles		
Winner	Best Lap	Winner	Best Lap	Winner	Best Lap	Winner	Best Lap			
Adieu	Orlo II	Adieu	Rainbow	Orlo II	Orlo II	Adieu	Rainbow			

BOAT	OWNER	MOTOR	1st HEAT—50 MILES			2nd HEAT—50 MILES			3rd HEAT—50 MILES			TOTAL RACE	
			Time	Speed	Best Lap	Time	Speed	Best Lap	Time	Speed	Best Lap	Time	Speed
Adieu.....	Webb Jay.....	200 h.p. Hall Scott	1-18-01	38.4	3-06	1-21-28	36.8	3-01	1-19-50	37.6	3-08	3-59-19	37.5
Rainbow.....	H. B. Greening.....	250 h.p. Sterling	1-18-13	38.3	3-03	2-12-28	22.6	3-04	1-19-53	37.6	3-06	4-50-34	30.9
Orlo II.....	Geo. Leary, Jr.....	2-225 Sterling	1-18-47	38.2	3-05	1-17-35	38.8	3-00	Did not start			Did not finish	
Miss Miami.....	C. G. Fisher.....	450 h.p. Allison	Did not start			Did not start			Did not start			Did not finish	
Former Record (Detroit, 1920)—Rainbow.		250 h.p. Sterling	1-22-57	36.1		1-20-42	37.2		1-21-32	36.8		4-05-11	36.6

## RUNABOUTS—MILE TRIALS

Boat	Owner	Average of 6 One-Mile Dashes	Best One Mile
Orlo II.....	Geo. Leary, Jr.....	47.0 m.p.h.	47.9 m.p.h.
Rainbow.....	H. B. Greening.....	41.8 m.p.h.	41.9 m.p.h.
Gar Jr. II.....	G. A. Wood.....	41.8 m.p.h.	42.3 m.p.h.

## Times Made in Laps—Two Miles Each

FIRST HEAT—February 10, 1921

Boat	Owner	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Pts.
Rainbow.....	H. B. Greening.....	3.23	3.10	3.12	3.08	3.08	3.07	3.04	3.11	3.05	3.03	3.06	3.06	3.06	3.06	3.11	3.07	3.11	3.07	3.08	3.06	3.06	3.04	3.05	3.05	3	
Orlo II.....	Geo. Leary, Jr.....	3.35	3.13	3.12	3.13	3.06	3.06	3.07	3.05	3.08	3.00	3.08	3.07	3.06	3.06	3.09	3.06	3.11	3.08	3.06	3.08	3.07	3.00	3.09	3.09	2	
Adieu.....	Webb Jay.....	3.19	3.11	3.08	3.08	3.07	3.08	3.07	3.07	3.06	3.07	3.07	3.06	3.06	3.07	3.06	3.06	3.06	3.06	3.06	3.06	3.07	3.06	3.06	3.06	4	

SECOND HEAT—February 11, 1921

Boat	Owner	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Pts.
Rainbow.....	H. B. Greening.....	3.24	3.04	17.53	5.31	5.41	5.41	5.32	5.30	5.24	5.16	4.55	5.01	5.08	4.59	4.53	4.53	4.55	4.26	4.22	4.33	4.22	4.21	4.23	4.11	4.10	2
Orlo II.....	Geo. Leary, Jr.....	3.39	3.17	3.09	3.07	3.05	3.01	3.04	3.04	3.07	3.03	3.07	3.02	3.09	3.03	3.04	3.11	3.05	3.00	3.03	3.02	3.02	3.03	3.02	3.06	3.06	3
Adieu.....	Webb Jay.....	3.17	3.01	3.02	3.04	3.22	3.10	3.02	3.01	3.02	3.01	3.05	3.09	3.08	3.07	3.20	3.53	3.03	3.04	3.04	3.03	3.03	3.07	3.07	4.23	3	

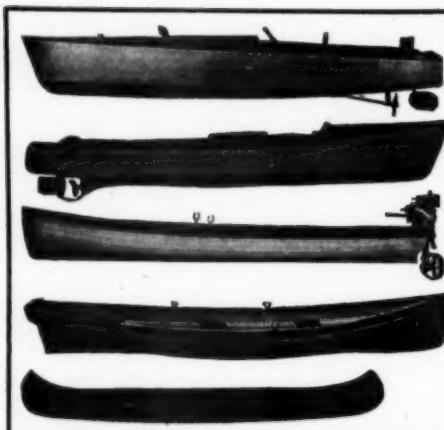
THIRD HEAT—February 12, 1921

Boat	Owner	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Pts.
Rainbow.....	H. B. Greening.....	3.33	3.12	3.14	3.13	3.13	3.14	3.13	3.18	3.18	3.16	3.11	3.12	3.09	3.08	3.09	3.11	3.06	3.09	3.08	3.09	3.08	3.07	3.07	3.08	3	
Orlo II.....	Geo. Leary, Jr.....	Did not start																									
Adieu.....	Webb Jay.....	3.21	3.08	3.10	3.00	3.09	3.12	3.10	3.11	3.11	3.12	3.10	3.11	3.12	3.12	3.13	3.12	3.12	3.15	3.06	3.11	3.12	3.11	3.13	3.12	4	

## Express Cruiser Races

Boat	Owner	Make of Motor	Total H.P.	10 Miles Bay Race 2 Mile Laps		10 Miles Ocean Race 2 Mile Laps		Miami to Palm Beach and Return 129 Miles		Miami to Key West 157 Miles	
				Time	Speed m.p.h.	Time	Speed m.p.h.	Time	Speed m.p.h.	Time	Speed m.p.h.
Gar Jr. II.....	G. A. Wood.....	2 Smith.....	900	18-37	32.2	19-29	30.8	3-55-51	32.81	4-52-00	32.3
Cigarette.....	G. Hammersly.....	2 M. & T.....	800	18-58	31.7	20-12	29.6	4-40-12	27.62	5-21-40	29.3
Shadow V.....	C. G. Fisher.....	2 Speedway.....	400	23-58	25.0	25-17	23.7	5-06-34	25.24	6-33-45	24.0



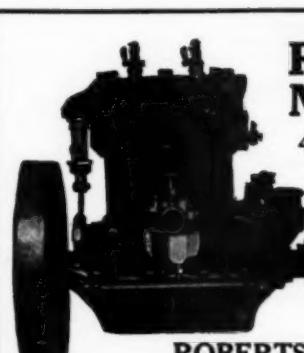


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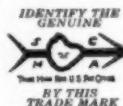


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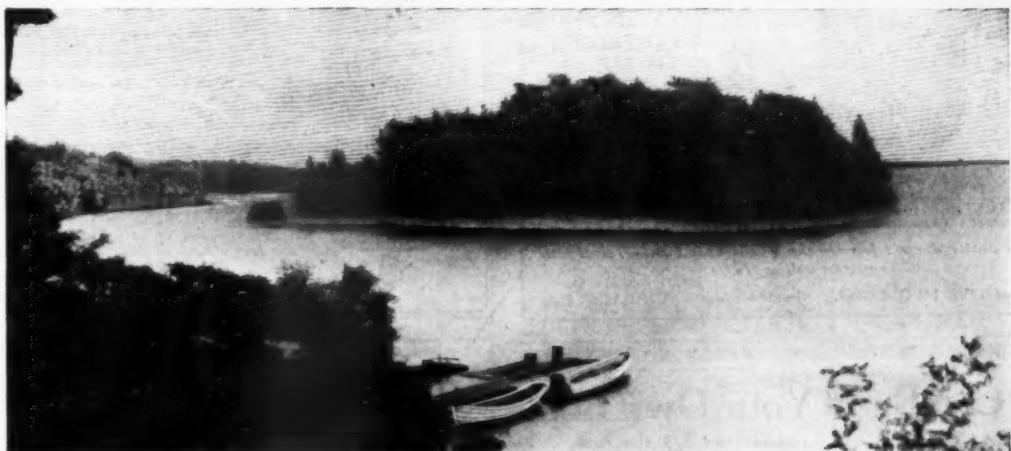


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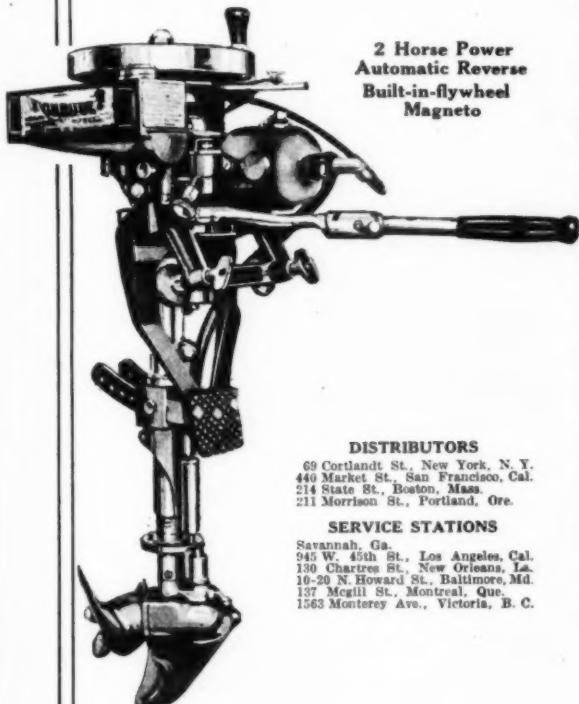
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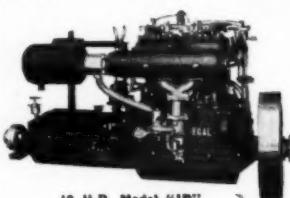
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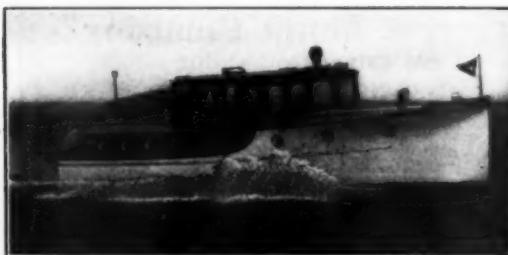
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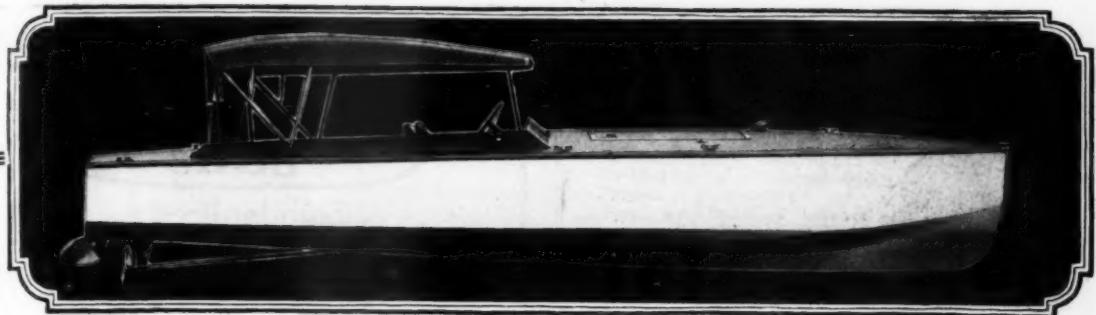
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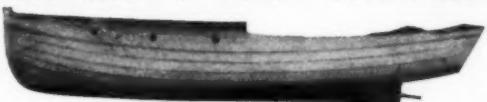
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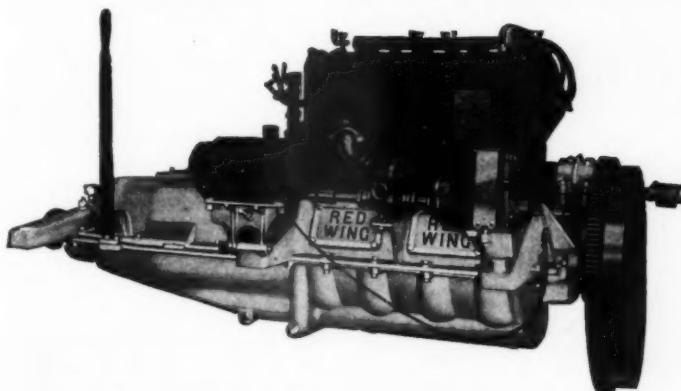
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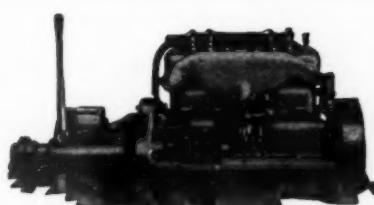
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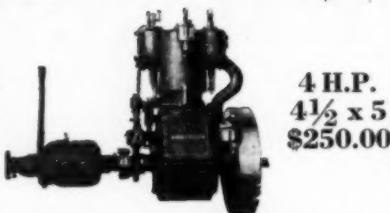


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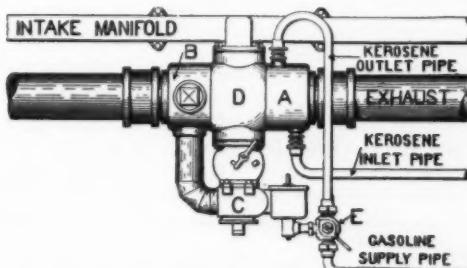
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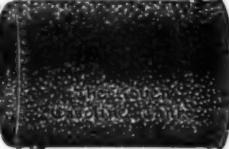
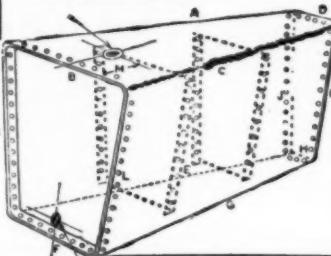
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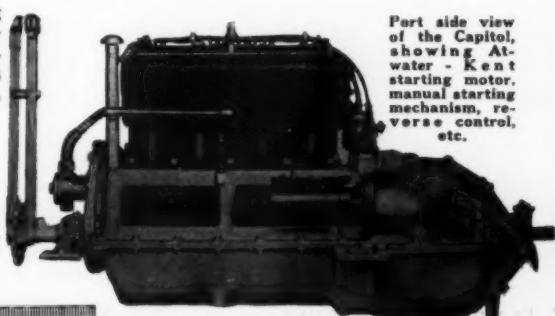
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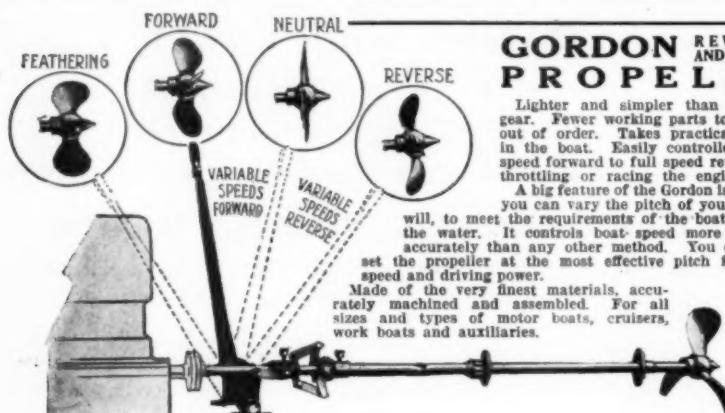
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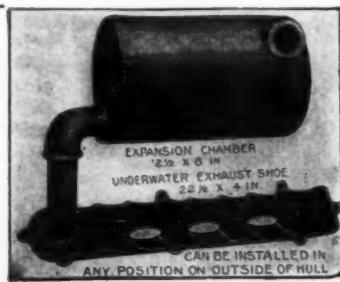


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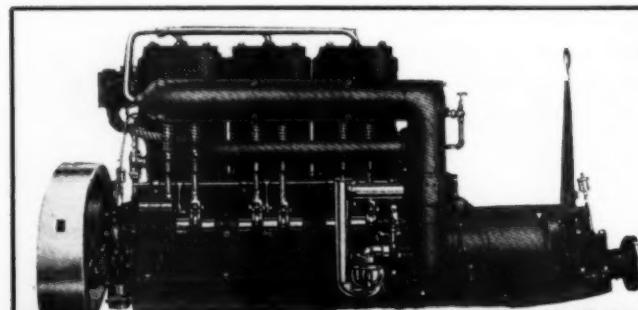
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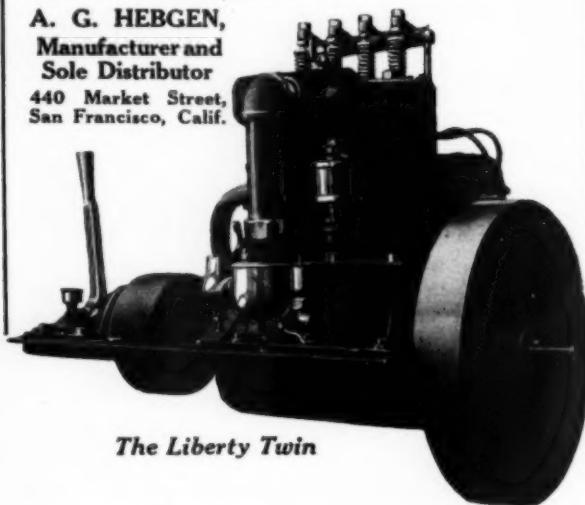
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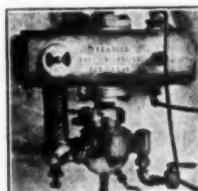
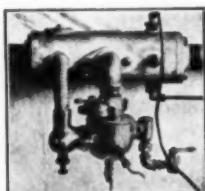
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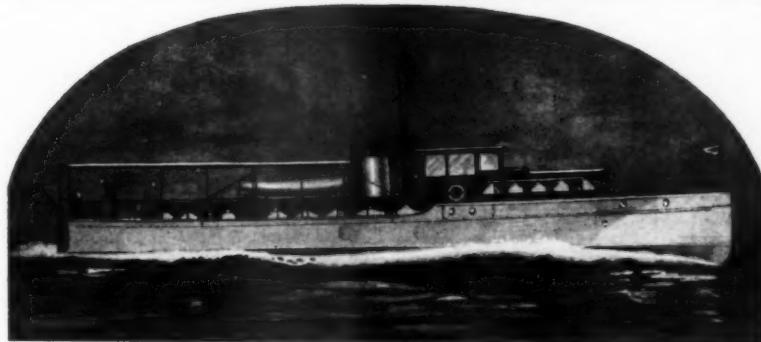
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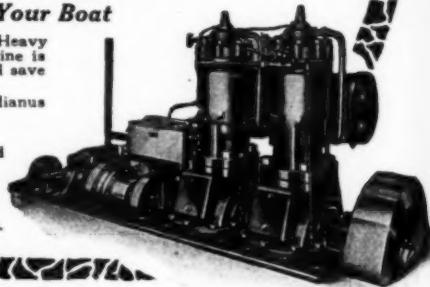
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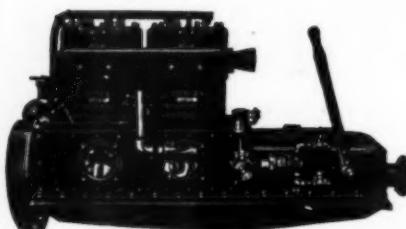
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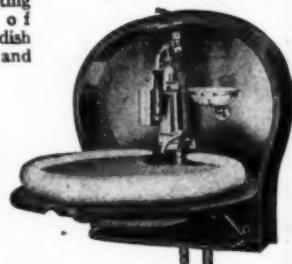
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# SAL

### SPEEDOMETER for MOTOR and SAIL YACHTS

IS THE ONLY KNOWN DEVICE FOR DETERMINING THE  
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Use Jeffery's Waterproof Marine Glue

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For more than 75 years Jeffery's Marine Glue has been the choice of the foremost boat builders of the world.

Jeffery's is a product that has not varied from the strict line of quality—it is not a competitive commodity made to meet a price.



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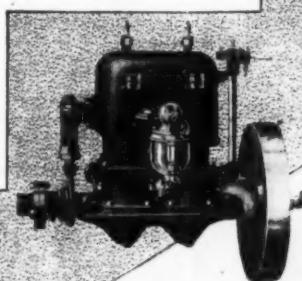
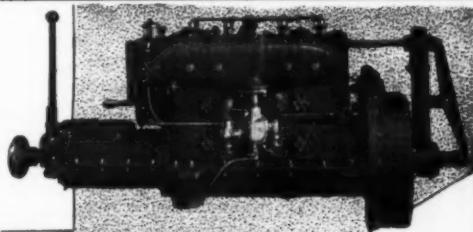
152 Kneeland St., Boston, 11, Mass.

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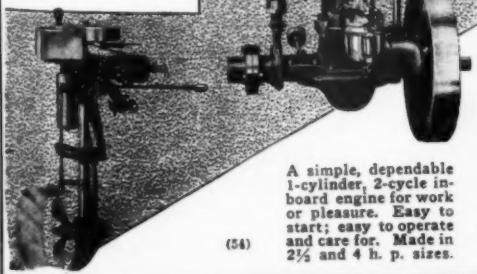
Somewhere in the line of Lockwood-Ash Marine Engines is one that will meet your needs.

From the clean-cut, sturdy 2 h.p. outboard engine to the big four-cylinder power plant are varieties in size to cover a wide range of power and speed requirements.

Big brother of the Lockwood-Ash Engine family, a highly developed 4-cylinder, 4-cycle marine power plant. Rugged and dependable. Delivers up to 20 h.p. Built with or without rear starter.



This portable, 2 h.p. outboard engine is a favorite for both pleasure and work. Easily attached to a row-boat. Full of pep and thoroughly reliable.



(54)

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Lockwood-Ash Marine Engines are products of an institution which always has placed quality first. Experience has pointed out the sizes that make up the well-selected line, and the quality standard has dictated the thorough workmanship which is in every Lockwood-Ash Engine. Ask for the booklet that tells all about Lockwood-Ash Engines. Also ask about the 30-day trial plan.

LOCKWOOD-ASH MOTOR CO., 2107 Jackson St., Jackson, Mich.

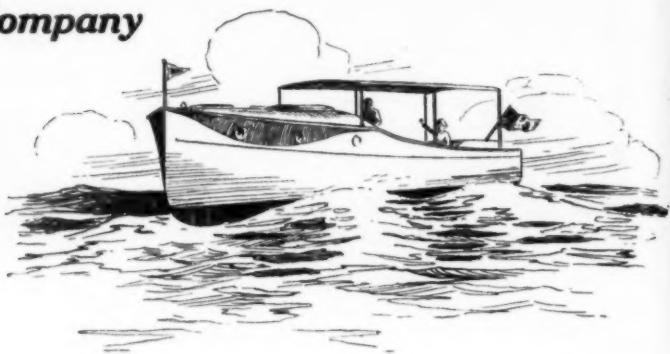
**LOCKWOOD-ASH**  
MARINE  ENGINES

**The Richardson Boat Company**

uses



**WATERPROOF  
SPAR VARNISH**



**K**AURI Spar Varnish and Enamel are being used in ever increasing quantities by successful builders who realize that continued satisfaction for the owners depends upon the materials used in the finish of their boats.

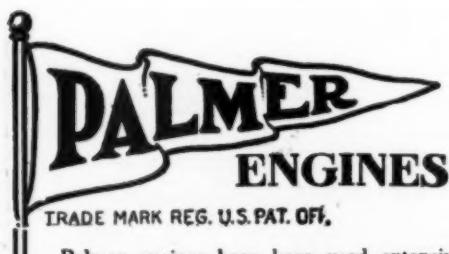
Use Kauri on *your* boat this Spring. Sold everywhere and guaranteed not to scratch white, turn white in salt water or fresh, chip, crack or bloom.

The sketch above portrays the new Richardson 26' x 8' 6" Stock Cruiser "Scout" which promises to be one of the most popular boats of its size and type ever built. The Richardson Boat Company, North Tonawanda, N. Y. build many beautiful boats to special order, in addition to their standardized cruiser and runabout types.

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Palmer engines have been used extensively for twenty-five years in both pleasure and work boats.

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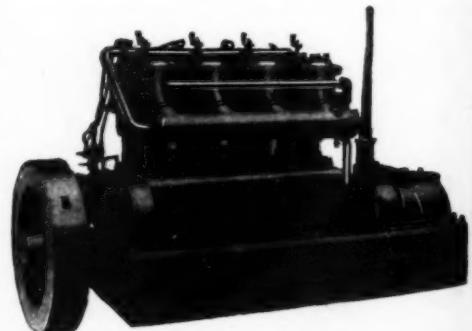
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**TWO CYCLE**  
2½ H.P. to 10 H.P.  
One and Two Cylinders

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BIG REDUCTIONS IN SECOND-HAND AND REBUILT ENGINES

36 H.P. Model D Gray Prior	(Like new) used 2 months.	\$900.00
20 " 4 cyl.	2 cyc.	100.00
15 " 2 "	2 "	175.00
10 " 4 "	4 "	125.00
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3 " 2 "	2 "	70.00
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All these engines are fitted with Carburetors and Shaft Couplings.

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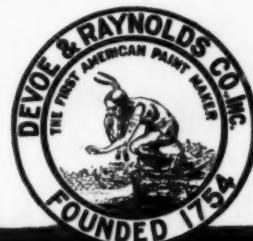
*The safest decisions  
are made by "the old  
man with the scythe"*

THERE is no severer critic; no more searching investigator than Father Time. He thinks calmly; acts slowly; and judges wisely.

Devoe Products have been highly regarded for more years than this country has been a Republic. When you use a Devoe Paint or Varnish on your boat, you get the benefit of the hardest test any product can pass — Father Time's.

Devoe makes a paint for every fresh water or salt water boating need. If you have any doubts or questions about boat-painting,—ask us; we'll be glad to give you the benefit of our 166 years of paint making experience.

Manufactured by  
**Devoe & Raynolds Co., Inc.**  
New York      Paints, Varnishes, Stains,  
                    Enamels, Brushes, Insecticides      Chicago



## The Smell of Spring

Is in the air, you can't get away from it. Before you know it, it is going to pull you down to the water front and you are going to drag the cover off the old boat and see what she needs for 1921.

That is where we come in.

## MARINE SUPPLIES

Our eighty years experience in supplying the wants of boatmen can be of great help to you in solving some of your problems.

Our Catalog shows a large line of practical equipment besides containing authoritative articles on the care and management of all kinds of boats, installation of engines, etc. Sent free to boat owners.

Our revised discount sheet shows strong inducements to purchase early.

Send for it.

**GEO. B. CARPENTER & CO.**

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Chicago

*"Imitated but Not Equalled"*

## BARKER MOTORS

Sizes "A" and "B" adopted as standard equipment for 12-foot Tenders and 18-foot Dories of TOPPAN BOAT MFG. CO.

### PRICES STABILIZED FOR 1921

Write for Barker "Red Letter" Book of 2-Cycle Motors

DISTRIBUTED IN NEW YORK BY:

TOPPING BROTHERS,  
122 Chambers Street.

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TOPPAN COMPANY,  
101 Haverhill Street, Boston.

Made by

**THE BARKER FACTORY  
NORWALK CONNECTICUT**

## Adieu Wins Fisher Trophy Race

(Continued from page 10)

from Buffalo. So quietly and mysteriously was all this work carried on that not even the Sterling Engine Company knew that the motors were for a Fisher Trophy boat. Work went on day and night at the Sea Sled plant at West Mystic, Conn. It was planned so well that there wasn't a hitch anywhere. Everything went according to schedule, something out of the ordinary in most boat shops.

The trial date came. The thermometer at Mystic stood at 2 below zero. The Mystic river where the trials were to be held was frozen solid. Tugs were dispatched from Noank as ice breakers but even then the floating ice might tend to cut down the speed to such an extent that the guaranteed speed of 45 miles per hour would not be obtained. However, it was decided to hold the tests. A measured mile was staked off. Timers came from New York and Washington and a speed of 45 miles and more was made. She was accepted on the spot. To get Orlo II to Miami, it was only necessary to charter a special express car which was attached to one of the Florida limited trains and she reached her destination more than a week previous to the first race.

When the time approached for the start of the first heat, spectators' boats occupied every point from which the races could be seen from the water. Without question, there were more spectators' boats than in previous years. The land on all sides of the course was banked with people and automobiles. Perhaps some 20,000 or 30,000 people were on the side lines, fully as many as attend the important football games.

The start of the first 50 mile heat was scheduled for 3 P. M. The rules provided that there must be no postponement for any cause. The boats were aware of this so they were on the course early. Adieu made the best start. At the crack of the gun, she sprang toward the starting line as though she had been fired from a cannon. Rainbow was slow getting into action as her owner seemed to throw in his clutch before he gave the motor its gas. Orlo II was even slower getting over the line. Her surface propeller seemed to churn water without getting much boat speed and consequently she was 15 seconds behind Adieu at the start.

The lead which Adieu obtained at the start she held throughout the race, although she was once almost caught by Rainbow at the end of the twenty-eighth mile. It looked as though Rainbow was about to pass Adieu. She established an overlap at the upper turn but lacked the necessary last ounce of speed to get by. After that Rainbow dropped a few seconds astern for some reason. Although she made some of this up again, the 50 miles were completed before she had recovered it all and she was 12 seconds astern at the finish line, only about three boat lengths to be sure, but enough to give Adieu the race.

All eyes were on Orlo II. This was her first race and everyone was intensely interested in what she would do. Many had expressed the belief that she would not be able to turn readily. Such proved to be the case. She was extremely fast on the straightaways but could not make the turns without slowing down. The 15 seconds late at the start increased to 26 seconds at the end of the fifth lap—the 10-mile mark. At 16 miles she was only 22 seconds astern, at 24 miles, 27 seconds behind, at 40 miles she had lost a few more seconds and was trailing by 38 seconds. At the end of the fiftieth mile Orlo was 46 seconds behind the winner and 12 behind Rainbow.

In the first heat all three boats had bettered the existing 50-mile record made at Detroit last summer. Adieu's speed for the distance was 38.4 miles per hour. Rainbow made the best speed over one 2-mile lap which she did at the rate of 39.3 miles per hour.

Adieu's running was remarkably uniform and consistent. Twelve of her last fourteen laps were made in 3 minutes, 6 seconds each, the other two requiring one second longer.

The start of the second heat was similar to the first. Adieu was again ahead over the line followed 3 seconds later by Rainbow and 2 seconds later by Orlo II. This heat was close from the start but on the third round Rainbow hit something floating, damaging her propeller causing her to slow down and giving her no chance for first or second place. At the end of 10 miles, Adieu led Orlo II by 31 seconds. At 20 miles Adieu was 34 seconds ahead, at 30 miles she was 27 seconds ahead. Orlo's 21st lap was made in 3 minutes flat, at the rate of 40 miles an hour, the fastest of the race. On the 17th lap Adieu stopped for 2 minutes to change a plug and Orlo II went into the lead which she held to the finish averaging 38.8 miles per hour for the 50 miles, a new world's record for runabouts and a speed better than hydroplanes made in the Gold Cup Races only a few years ago.

The points now stood Adieu 8, Orlo 7, Rainbow 6. It was plainly to be seen that it was anybody's race. The boats were all of exactly the same speed and that one which was the best

(Continued on page 88)

# THE HESS MONO-MARINE

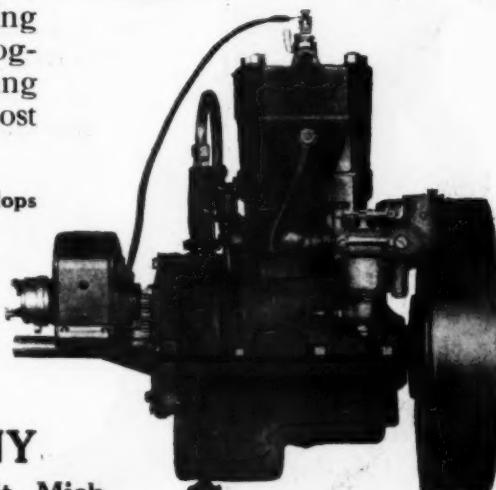
THE sturdiest, most dependable little power plant on the market today. A medium duty engine built to endure real heavy duty service. It has power enough to propel any boat up to thirty feet in length, and is so constructed that any novice can easily make any necessary repairs.

Every engine is equipped with dual ignition and oil pump, thereby insuring ease in starting and positive lubrication of all bearings.

A most important feature in the design is the fact that many of the working parts are interchangeable with the similar parts of the Ford Motor, i. e., the piston, piston pin, piston rings, connecting rod, valves, valve springs, and timing gears. Every one instantly recognizes this advantage in making replacements at a minimum cost of money and time.

**3 3/4-in. bore by 4-in. stroke. Develops 4-5 H. P. 925 r. p. m. Four cycle.**

**Write today for catalog**



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Look for Our Sign at the Dealer's

# MICHIGAN MARINE MOTOR

**\$135.**



**The Boatman says:**

That's the motor I've always wanted.

**The Dealer says:**

That Motor will sell.

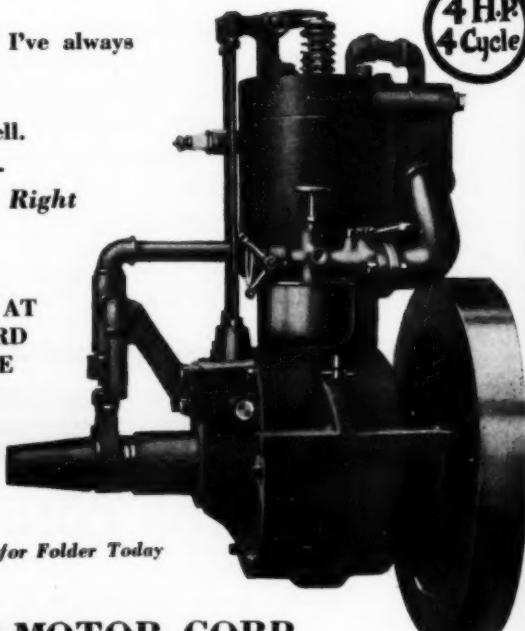
**WHY—**

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**REPAIRS AT  
ANY FORD  
GARAGE**

*Write for Folder Today*

**4 H.P.  
4 Cycle**



**MICHIGAN MARINE MOTOR CORP.**

**7235 East Jefferson Ave.**

**DETROIT, MICH.**

*Advertising Index will be found on page 130*

# Announcing McKinnon Reverse Gears

**A**LTHOUGH this is the first printed announcement of the McKinnon Reverse Gear that has ever appeared, this is not a new product that awaits your trial and approval. It is the result of many years of experience and the gear has made good in service far more severe than any the average gear ever meets.

We have operated a commercial motor boat for delivery purposes for many years. Three years ago we came to the conclusion that we would have to make a special gear for our own use, because we had been unable to buy any gear in the market that would stand up to the work we required.

To build a gear was not entirely foreign to our experience because we were manufacturing transmission gears and clutches in large quantities for the most successful motor truck manufacturers in America. We had the tools, the machines, the materials and the engineering knowledge at hand.

The first McKinnon Reverse Gear made good from the start. In three years of hard service it has not even needed adjustment. Designed along new lines and built solely for our own use, even we were surprised at its strength.

A local boatman asked us to build another gear for him. Unsolicited orders followed from other boat owners, fishermen, etc. Without effort its fame spread. Practically forced into the manufacture of reverse gears, we hired the best engineers obtainable to refine the design before placing it on the market.



The McKinnon Reverse Gear is now in production. We believe it to be the simplest, strongest, most durable gear on the market. It is a thorough success from every standpoint and is absolutely GUARANTEED FOR ONE YEAR. Gears in stock for immediate delivery.

*Write today for full description and prices, stating size of your engine and boat.*

**The McKinnon Iron Works Company**

Established 1879

**Ashtabula.**

**Ohio**



Manufactured by H. B. Fred. Kuhls

## Keep Your Decks Tight

Elastic Seam Composition remains elastic and flexible, adhering to the sides of the seams and yielding to the swelling and shrinking of same. It will last from eight to twelve years, keeping the decks tight and wearing down with the planking.

We would be pleased to submit estimate for caulking and filling of Decks, guaranteeing same for a period of years.

### ELASTIC COMPOSITION AND REPAIR COMPANY

H. B. Fred. Kuhls, Manager

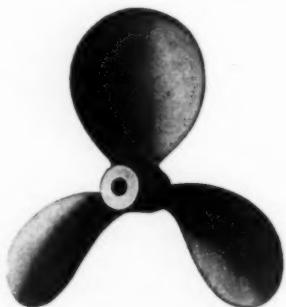
6411-23 Third Ave., Brooklyn, N. Y.

## HYDE TURBINE TYPE PROPELLERS

**SPEED**

**EFFICIENCY**

**RELIABILITY**



Our catalog, "Propeller Efficiency," will be mailed upon request.

**HYDE WINDLASS COMPANY**  
BATH, MAINE, U. S. A.

### Adieu Wins Fisher Trophy Race

(Continued from page 84)

handled was likely to win. None of the owners had any chance to "pep up" their motors as the boats were taken away from them after each heat and not returned to them until 15 minutes before the start of the next heat. Reliability was the end sought and so far all motors had stood up 100 percent perfect.

The course on the third day was laid out on the ocean. The length of each lap was the same, 2 miles, with one turning buoy at the end of a mile straightaway. The owners had all feared this race as there were chances for very rough water. However, the wind was slightly off shore and so besides a long ground swell and some chop it was not half bad going.

The boats did not come out to the starting line until after the preparatory signal had been given at 2:55. Again Adieu was first over the line, followed four seconds later by Rainbow. Orlo II did not get to the starting line at all for this heat. On the way out, the threads which hold the exhaust pipe into the exhaust manifold burned and stripped. The exhaust pipe slipped out of the manifold leaving no alternative but for Orlo II to withdraw.

Adieu and Rainbow had the race of their lives in this heat. Adieu took a big lead early in the race due to her ability to turn sharply. Rainbow was making poor work at the turns. At 30 miles Adieu led by 42 seconds. On the thirty fourth mile Rainbow's owner suddenly found that he was not getting all out of the turns which his boat was capable. He tried putting his helm hard over instead of part way gradually as he had always done. Rainbow spun around on her stern like a scared cat. He gained 6 seconds on Adieu. On the next lap he gained 6 more, then 3 and at the end of 40 miles was 33 seconds behind but going stronger every minute. On the twenty-second lap Adieu led by only 19 seconds, on the twenty-third by 13 and at the end of the twenty-fourth by 7 seconds. "Could Adieu last" the crowd shouted. The supporters of Rainbow cheered encouragement. On the back stretch it almost looked as though Rainbow was going to catch Adieu at the turn, but Webb Jay at the wheel of Adieu was too old a hand at racing to get excited. He held the pole and Rainbow had to swing wide. Down the home stretch they came, Adieu leading by two lengths, then a length and a half. The finish line was only a few yards off, the checkered flag was up—Rainbow's bow was beginning to lap Adieu's stern but bang went the judges' gun—the race was over. Adieu had won the greatest motor race in history by a margin of only 3 seconds.

The race was well handled by the many visiting motor boatmen who went to Miami especially for the races. The writer acted as general chairman. He was ably assisted by Rex W. Wadman of New York and Commodore C. W. Kotcher of Detroit. Commodore H. A. Parsons of Cleveland, G. T. White of New York, H. L. Stone of New York, Arthur Utz of Buffalo and W. E. Gibb of Middletown, Conn., handled the timing very ably. The Technical Committee in charge of the boats consisted of Commodore G. A. Wood of Detroit, Worth Hall of Detroit and Frank Fey of Detroit.

Commodore A. A. Schantz was in charge of the judges of the course. He was assisted by Commodore Roberts, Commodore Wood of Monroe, Mich., and W. C. Morehead of Milwaukee. Patrolling was in charge of C. A. Sawyer, H. R. Duckwall, L. A. Young and F. D. Gheen of Dayton, Fla. Commodore A. I. McLeod of Algonac acted as chairman of the Judges' Committee. A. C. Newby of Indianapolis and John Levi of Miami Beach were in charge of the course.

Others assisting include Commodore C. A. Criqui of Buffalo, William Bruns of New York, R. B. Burnham of New York, Guy Livingston of the Miami Chamber of Commerce and Gordon Nye of Miami.

The next race for the Fisher Trophy will be held on the Niagara river at Buffalo, the latter part of August, 1921.

### Single Handing It

(Continued from page 15)

aids to navigation one is apt to neglect the topographical side of chart work, but when a buoy turns up missing, it is high time to pause and identify rocks, trees, and contours. So, working from the chart, I compared the lay of the land with the position of my buoy (which from the erosion of the previous winter's ice, was quite innocent of paint) and found that the first, third and fourth spars had disappeared, and that mine, the second of the series, was the only navigational aid in the vicinity. Proceeding, then, at slowest speed, and watching the color of the water, it was possible to pass successfully through the narrows into deep water. Was I lost even for an instant? There was no one there to bear witness to such a fact.

A thorough understanding of charts is as vital to the single-hander as the dependability of the line to which he attaches his

(Continued on page 94)

# Don't Start the Season Without a Full Set of **RAJAH** **SPARK PLUGS**

WHAT is it worth to you to go through the whole season without losing a minute for spark plug trouble? It is worth a lot to any man who appreciates the value of his own time.

So tune up your motor, buy a full set of Rajah Spark Plugs and start the season right.

Rajah Plugs are the most dependable spark plugs it is possible to build. In their design and construction there are no freaks or fancies for which we claim impossible advantages.

But we do claim that there is not a plug on the market of any better design, materials or workmanship,—not a plug that will give any greater service or satisfaction. And the results of nearly twenty years have proved that claim.

Which is it to be? A season of petty troubles and annoyances, or a season of uninterrupted pleasure? Start the season right!

Waterproof Rajah Plug...\$1.50

Giant Rajah Plug.....\$1.25

Standard Rajah Plug...\$1.00

### Specify Rajah Equipment on Your New Engine

If you are getting a new boat or engine this season, don't forget to specify Rajah Spark Plug when you place your order. This will save you future trouble and expense which you can just as well avoid.

*All sizes and types, to fit all makes of marine motors.*



Rajah Plug. Waterproof, shockproof, breakproof. \$1.50, all threads



Regular  
Fits any  
size cable

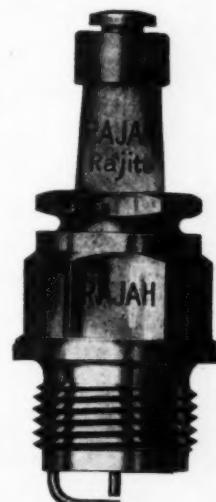


Thrust  
The Thrust and Hook Rajah  
Terminals are furnished with  
ferrules to fit any size cable



Hook  
The Thrust and Hook Rajah  
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Thumb Nut  
With all Rajah  
plugs unless  
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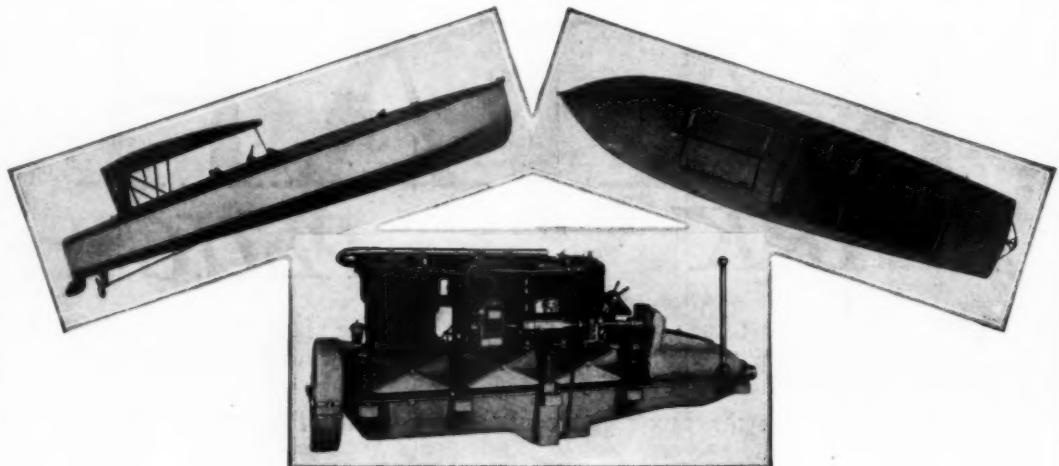
The Standard  
Rajah Plug  
\$1.00  
all threads

Manufactured by Rajah Auto-Supply Co., Bloomfield, N. J., U. S. A.



Scripps

## "The Motor that crossed the Atlantic"



### The Newest Mullins Scripps Powered

**S**TILL another builder of standardized boats announces for 1921 the adoption of Scripps Power—the clean, quiet, smooth, peppy D-6.

This latest contribution to the marine field is offered by the real pioneers in stock boat construction, the Mullins Body Corporation of Salem, Ohio, who for 25 years have been building stock boats in mass production.

The new boat is a 25-foot, V-bottom speedster, an exceptionally fast, steady, dry and sane boat in every detail, modern to the minute.

Aiming high, the builders have exercised no little care in the selection of power plant, the final choice being a snappy "Six" full of pep, free from vibration, equipped with every modern convenience, and the time proven Scripps built-in service.

Scripps power plants are used in boats of every description: cruising, runabout, speed and commercial types. The power ranges run from 10 to 125 horsepower in 2, 4 and 6-cylinder. Some use gasoline exclusively; others are built for burning either gasoline, kerosene or distillate.

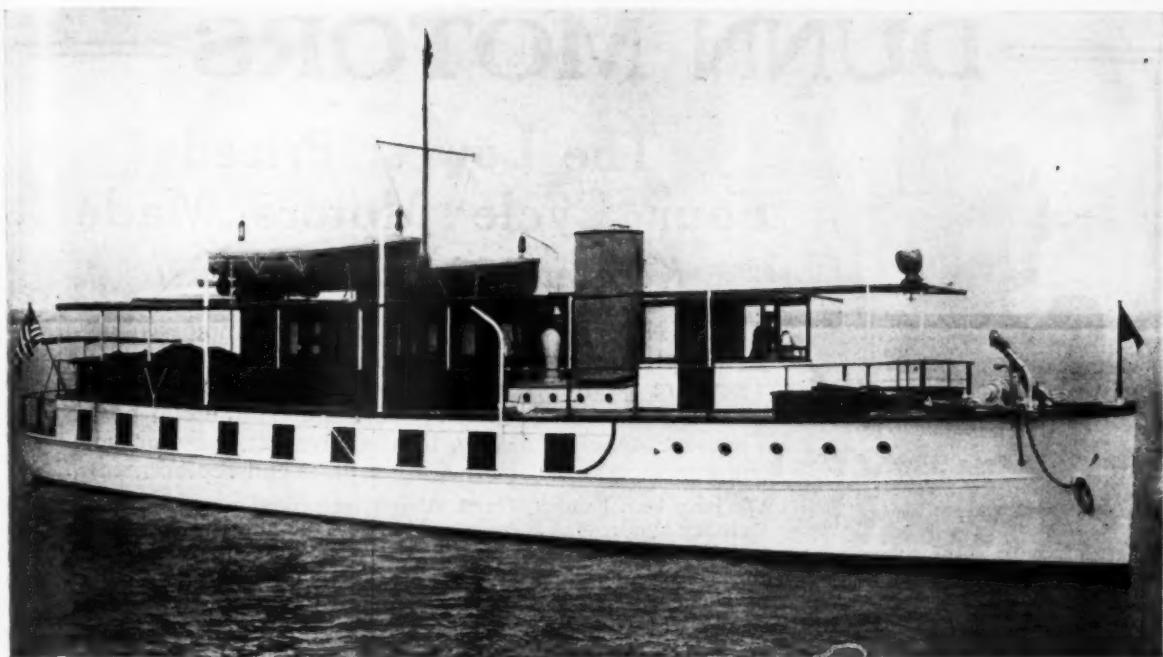
We also manufacture heavy duty types for operating pumps, compressors, generators and small machine shops.

**SCRIPPS MOTOR COMPANY**

5819 Lincoln Ave., Detroit, Mich., U. S. A.



Every Moving Part Enclosed



85-ft. Houseboat Luneta, Mathis-built for Col. S. L. H. Slocum, Washington, D. C.

## The Most Recent Development in Mathis-Built Houseboats

This new model 85-ft. houseboat represents the utmost in houseboat construction up to the minute.

It is the ideal combination of sea-worthiness, comfort, roominess, and ability-to-go-anywhere along tortuous inland streams of Florida.

It possesses advantages over the 120-ft. cruisers on every score from cruising comfort to maintenance and up-keep.

Owner's quarters contain four commodious double state rooms, a unique lobby, luxurious bath rooms, a delightful after-deck, and a large home-like deck house forward.

### The Feature of This Florida Season

is this new Mathis-built 85-ft. model, represented in Florida now by the **LUNETA**, illustrated above, and the **NAHMEOKA**, built by us for H. N. Baruch, New York.



After-deck on 85-ft. Mathis-built Houseboat Luneta, looking forward to deck-house

Among the other notable new arrivals in Florida this past season, are the two newest Mathis-built 61-ft. Houseboats — **Cyrene**, owned by Mr. R. M. Bond, Daytona, Florida, and the **Arlene**, owned by W. S. Selby, Sarasota, Florida.

## MATHIS YACHT BUILDING COMPANY

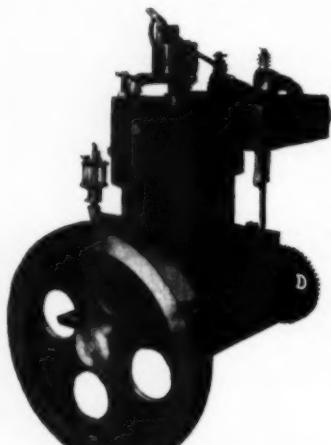
*Specialists in Houseboats and Cruisers  
from 40 to 120 Feet.*

**COOPER'S POINT, CAMDEN, N. J.**

# DUNN MOTORS

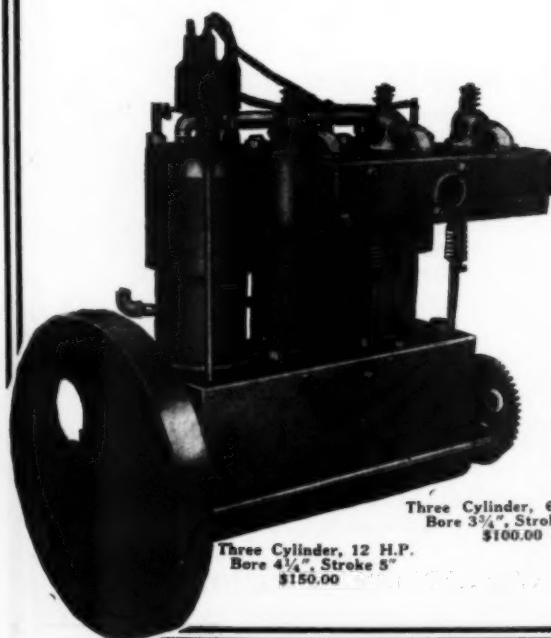


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\$42.50



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Bore 3 1/4", Stroke 4"  
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\$125.00



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Bore 4 1/4", Stroke 5"  
\$150.00

Three Cylinder, 6 H.P.  
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\$100.00

Advertising Index will be found on page 130

## The Lowest Priced Four Cycle Motors Made *Kerosene or Gasoline Fuel*

DUNN Motors are genuine four cycle motors of accepted design and the simplest possible construction. They are medium duty engines, suitable for pleasure boats and launches, small cruisers and commercial boats. They are smooth running, light in weight, easy to start and very accessible for making repairs and replacements.

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If you are looking for a lot of nickel plating, bright paint and fancy finish, you will be disappointed in the Dunn. But if you want a motor for service, this is the motor you are looking for.

Our prices speak for themselves. They cover the bare cost of material and labor. We have figured close and have held both items down to bare essentials because we know there are thousands of boat owners who cannot afford or do not feel justified in paying the high prices charged for most engines today.

The prices quoted include complete equipment, propeller, shaft, couplings, coil, spark plugs, mixing valves and oil cups. Foreign buyers should add 10% to cover cost of boxing for export and delivery F.O.B. steamer at New York City.

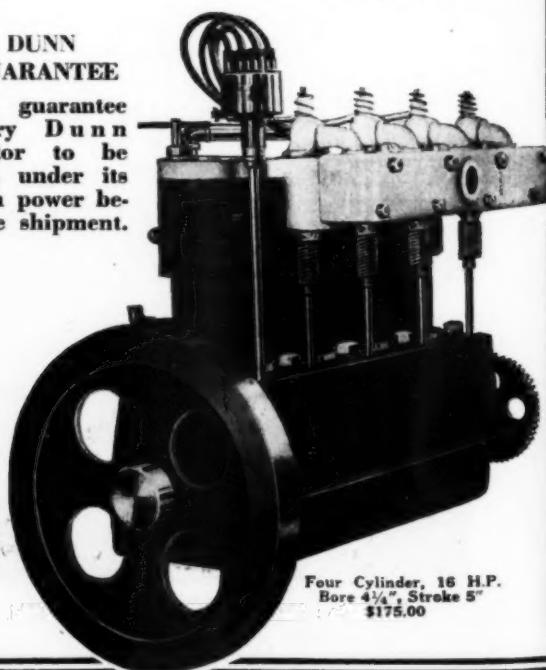
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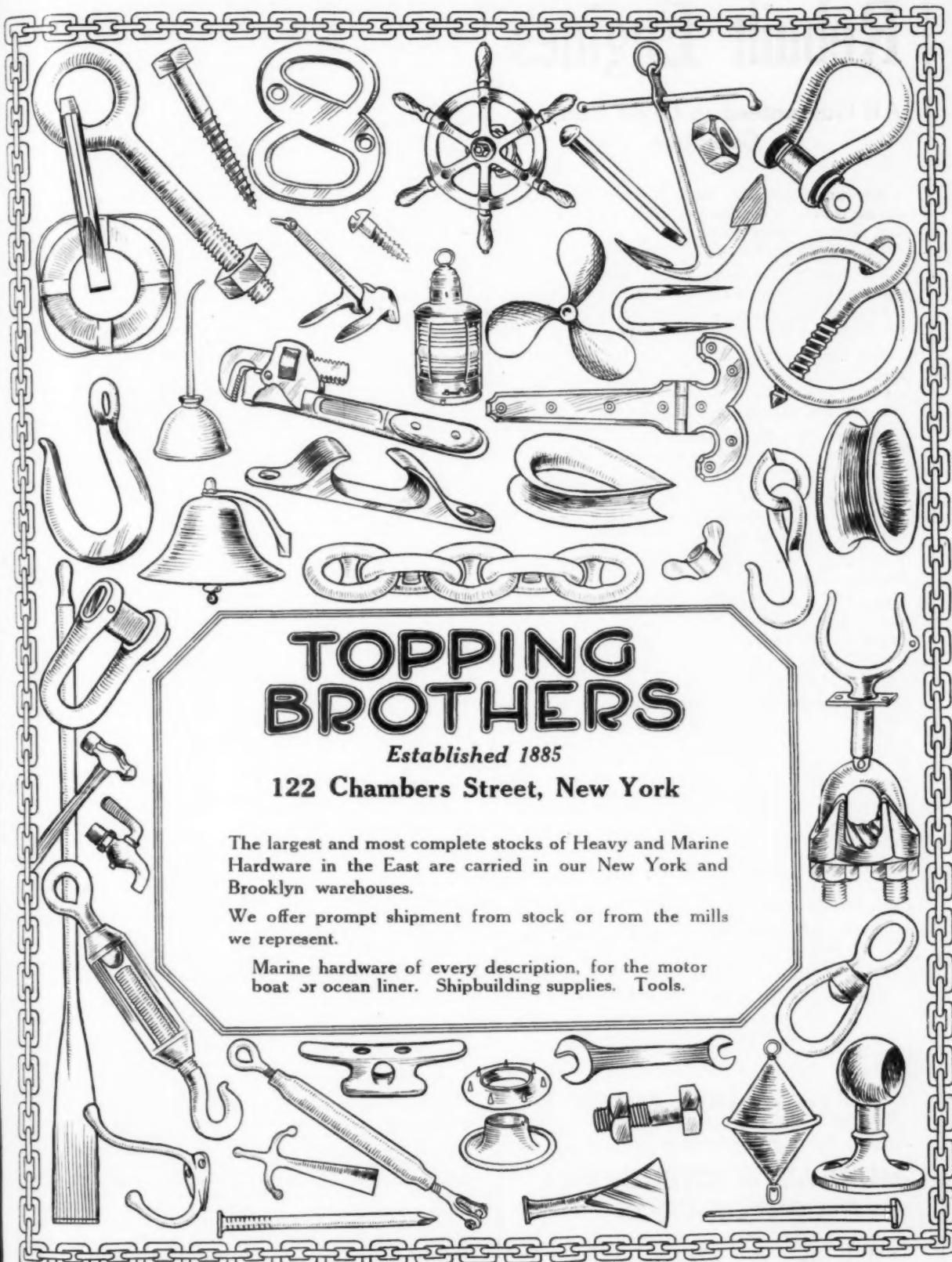
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1 R.H. and 1 L.H. 5 $\frac{3}{4}$ " bore, 7" stroke, Wisconsin marine motors. Complete with ignition, carburetion, and Seabury reverse gears.

Price—\$5,000 for the pair.

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1 R.H. and 1 L.H. 8-cylinder 6 $\frac{3}{4}$  x 7 $\frac{3}{4}$  Duesenberg high speed marine motors. These motors are complete with standard equipment.

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1 R.H. and 1 L.H. 8-cylinder Model F-300 Sterling engines. Complete with standard equipment.

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1 4-cylinder 28 H.P. Clifton marine engine. Equipped with imported Bosch magneto.

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1 50-Light Murray & Tregurtha direct connected set.

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Price—\$2,500.

1 R.H. and 1 L.H. 6-cylinder 6 $\frac{1}{2}$ " bore, 8" stroke, open base Murray & Tregurtha engines.

Price—\$3,000 each.

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Price—\$700.

1 R.H. and 1 L.H. 4-cylinder 6 $\frac{1}{2}$  x 8 Model E-4 M. & T. engines.

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1 4-cylinder 8 $\frac{1}{2}$ " bore, 11" stroke, 60-80 H.P. M. & T. rebuilt engine.

Price—\$3,000.

1 Universal 37 Ampere direct connected light set.

Price—\$250.

1 Herrischoff steam plant.

Price—\$2,800.

All Engines Subject to Prior Sale

**MURRAY & TREGURTHA  
CORPORATION**

Atlantic

Massachusetts

## Single Handing It

(Continued from page 88)

anchor, but there are many motor boatmen who cruise only out of and into their own harbors, who knows nothing of the subject—or either subject for that matter, if one is to judge from the number of boats piled high and dry after a storm. What's worse, the layman who calls a chart a map (thereby damning himself utterly in nautical circles) and connects the subject with unpleasant geographical sessions in school, has no conception of the fascination which chart reading holds for the experienced boatman. A Government chart of coastal waters is at once a picture and a highly interesting story. Between the covers of a thick volume it would not be possible to tell the things which one chart reveals to the intelligent navigator. But I can hint at the variety of its information and its importance to the navigator.

As might be expected, the chart shows the north point, the conformation of the coastline, and the geographical position of bays, rivers, islands, ledges, rocks, and so on. It also gives the depth of water reduced to mean low stage of the tide, and by a system of abbreviations tells the character of the bottom, so that the navigator may know where to venture and anchor with safety. It shows the location, color, kind and number of buoys, beacons, and lights, and by implication directs seafarers along a safe course; and it reveals the existence of marshes, trees, rocks, and buildings ashore, flats, half-tide ledges, isolated pinnacles of rocks, while relating a hundred other points of vital information.

When a ship is running in fog her captain goes to the bottom (figuratively speaking) for his position, knowing his general location but uncertain of his exact position, he takes soundings, refers them to his chart, and by the process of elimination usually gets his fix. For instance, he may see on the chart the mystic letters "sft gy M bk Sp Sh" at a depth of 98 feet, and if his determined depth agrees and he finds "soft gray mud with black specks and shells" clinging to the arming of his lead he knows at least that he is not in a locality termed "rky"—rocky, or "hrd S P"—hard sand, pebbles.

So intimate a knowledge of the character of the bottom does an experienced pilot obtain that he is able in fog to fix his position with the certainty of a man coming to the intersection of two unmistakable thoroughfares ashore. During the war when the hunt for German spies was in full and successful swing along the Maine coast, the commander of a detachment of patrol vessels found himself wrapped in fog and uncertain of his position. He asked his navigator if he could give the exact location of the flagship, and when that officer replied that he could give it only in a general way he sent for the native pilot—one of perhaps three men who really know the coast east of Bar Harbor.

"I want you to tell me exactly where we are," said the captain when the pilot reached the bridge.

"Exactly where we are," echoed the pilot. "I can tell you about where we *ought* to be."

"I know where we ought to be in this fog," said the captain, intentionally mistaking the pilot's words, "and if you will tell me where we are now we'll lay a course for Mount Desert and eventually get there. I've been told you know these waters as you know your own back yard."

"So I do, so I do," replied the pilot goodnaturedly. "If you'll just arm the lead and take a sounding I'll soon enough tell you where we are now."

The sounding was taken, and the arming examined and smelled, and then the pilot directed, "Hold a course no'th by west at seven knots, and in two hours you'll bring Newport Mountain on Mount Desert to bear one point on the port bow and close aboard."

And, as you will have surmised, the pilot was right, and the captain wished that the navy were filled with native sons of the deep.

Sounding is not always practicable for the single-hander, but in other phases of the navigational art he soon attains the proficiency of this Down East pilot. He learns to run his lines from the forward and after bits to his position at the steering wheel so that in making a landing he may step ashore and moor his craft in the twinkling of an eye. He remembers to stow his gear so that every article of equipment that may be needed in a hurry—an anchor, bilge pump, oil and grease cans, tools, life preserver, fire extinguisher, and so on, may be reached instantly and without stepping away from arm's length to the steering wheel. He gets the knack of laying his boat alongside a wharf so exactly that he may walk her in on the reversed propeller without the need of fenders—human or sennet; and although it may hurt his pride to do it, he recognizes the occasional necessity of making a bow landing and acquires the surefootedness which running about on deck and climbing slippery ladders entails. Principally he learns to trust his decisions, and to develop his intuition and put great confidence in his "hunches." He places a proper value on solitude—and talks a blue streak when ashore.

(Continued on page 102)



## An Absolutely New Refinement in Cruisers and Runabouts

The desirability of Albany's new type of boat has been demonstrated. It is speedier, quieter and more seaworthy. The additional comfort features of this revolutionary innovation in boat design—without considering its other advantages—are sufficient reason why this new Albany should be YOUR BOAT.

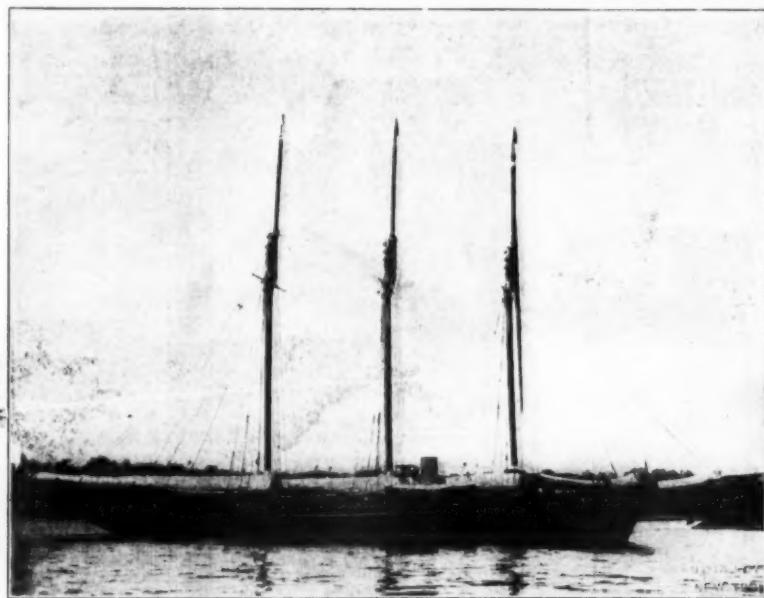
The Tarpon—first boat of this new type constructed—was the sensation of the December Motor Boat Show. Despite freezing weather and flood conditions its initial test set a new speed record for displacement runabouts. It also demonstrated unusual advantages in balance, control and quietness. The story of this new type of boat will be mailed on request.

The Albany fleet comprises 52-, 40- and 36-foot Express Cruisers. 35-, 32- and 26-foot Fast Runabouts. Correspondence regarding other lengths is invited. Construction details of any Albany Boat will be given on request. Photographs will be included where possible.

Immediate deliveries on a few Cruisers and Runabouts may be arranged.

**Albany Boat Corporation, Seventh St., Watervliet, N.Y.**

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S. S. Guinivere, Designed for Edgar Palmer by Gielow & Orr, New York. Built by Geo. Lawley & Sons, Neponset, Mass. Equipped with Clothel Electrical Refrigeration.

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During the years that Clothel Electrical Refrigeration has been doing such successful work on motor boats and yachts, many people have expressed a desire for an equally effective system in their homes.

This wish may be gratified. A Clothel Electrical Refrigerator designed especially for domestic use may now be had.

It's a complete refrigerating plant, compactly built and handsomely designed and finished.

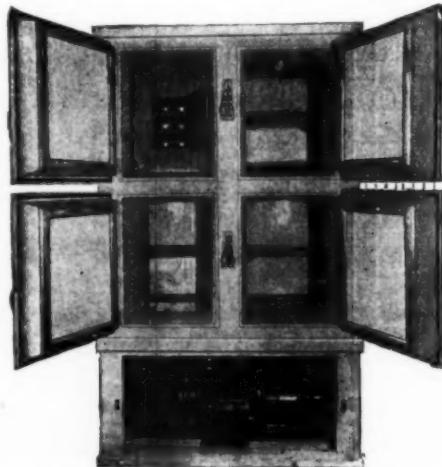
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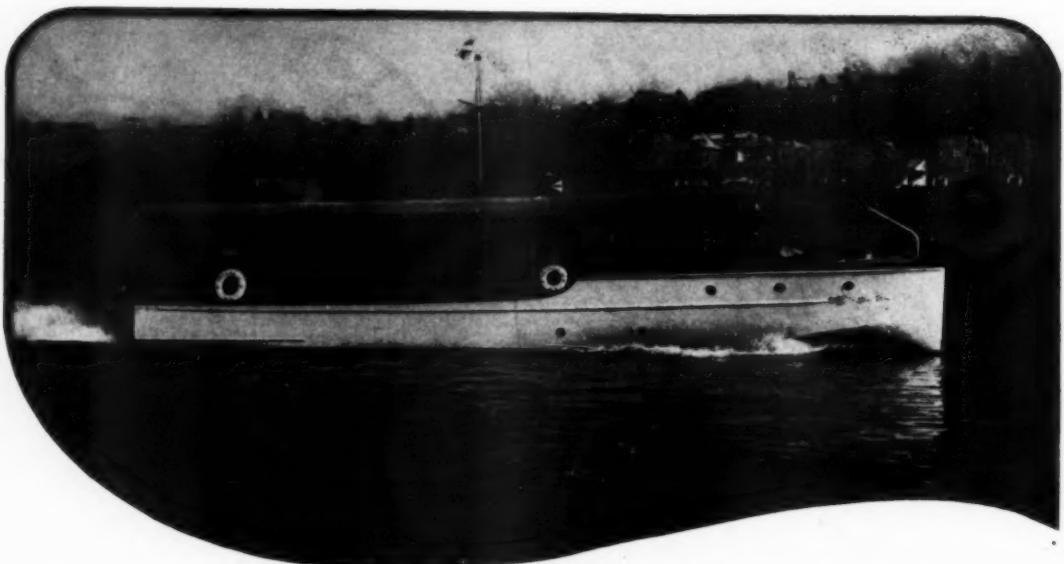
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DETROIT

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Be it a tender, runabout, small cruiser, or an ocean going yacht or houseboat, you may be assured of a thoroughly successful and satisfactory boat at a moderate cost.

*Let us submit estimates on the  
type of boat you want*

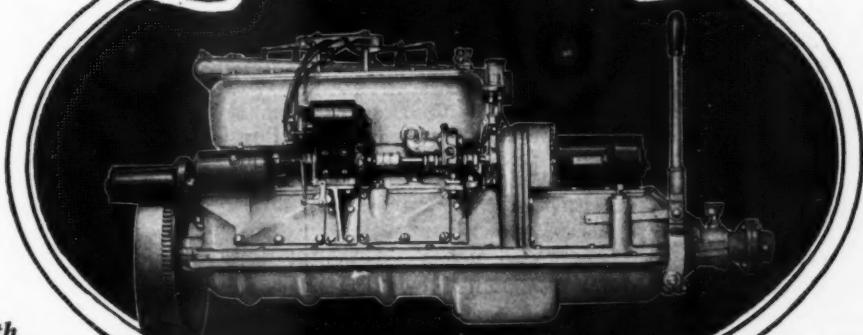
We also build the well known 20th Century heavy duty motors. Bore 6½", Stroke 8½". Two, four and six cylinders. 15 to 75 H.P.



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MORRIS HEIGHTS  
NEW YORK CITY

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*"A Kermath  
Always Runs"*



## KERMATH MARINE MOTORS EFFICIENT AND ECONOMICAL

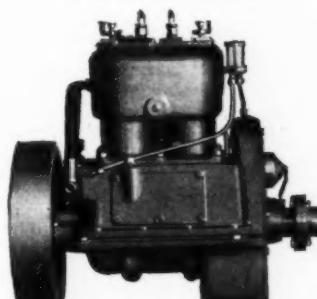
KERMATH efficiency and dependability is aptly described in the statement "A Kermath Always Runs". This dependability is what you hear men talking about whenever marine motors are discussed.

It is the result of steady development guided by practical engineers of ability and experience.

Supply a Kermath with gas and oil and it starts at the first turn. Every

Kermath must come up to our stringent specifications—each engine is not only designed right but built right.

### A NEW KERMATH



2 cylinder 4 cycle  
4-5 H.P. and 6-8 H.P.

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4 cylinder—4 cycle—12, 18, 20 and 40 H.P.  
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This book gives complete information for building the following boats:

10-foot mark boat, 12-foot outboard motor boat, 12-foot speed boat, 12-foot bangabout, 13-foot sea skiff, 16-foot sharpie, 18-foot runabout, 20-foot monoplane, 20-foot hydro-runabout, 20-foot knockabout, 20-foot tunnel stern, 22-foot V-bottom runabout, 25-foot V-bottom cruiser, 25-foot round-bottom cruiser, 25-foot cruiser (Consort II).

Every article is fully illustrated with working drawings and no information or instructions are missing which would be of assistance to the novice to build his own boat.

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The plans contain outboard profile, lines, inboard, construction and interior arrangement plans, sectional views and complete table of offsets. Accompanying each design is a description of the boat and a full set of specifications taking up step by step each feature of the boat's construction, how it should be built and the proper material to use.

Plans and specifications of the following boats are included: Edith, a 15-foot runabout; Jane, an 18-foot runabout; Katherine, a 30-foot cruiser; Dorothy, a 25-foot runabout; Zenith, a 25-foot cruiser; Cyclone, a 36-foot auxiliary; Eclipse, a 40-foot express cruiser; Magnet, a 28-foot cruiser; Tornado, a 45-foot auxiliary schooner; Broncho, a 29-foot cruising runabout; Shark, a 21-foot utility runabout; Claire, a 36-foot express cruiser.

Price of Twelve Complete V-Bottom Designs... \$2.00

(If ordered with the 2 other volumes of the Ideal Series, the price of the 3 books will be \$5.00.)

MoToR BoatinG has also published a log sheet to fit the standard 8 1/2" x 11" loose leaf folder. Each sheet contains spaces for such data as time of passing various aids to navigation, names of aids, magnetic and compass courses, distances, patent log readings, speed of boat, revolutions of motor, wind direction and force, condition of weather and sea, depths of water, fuel, time of high and low water, etc., etc.

### Prices

Charts 25 cents each or \$1.50 per set of 12 (Series B will be sent as published).

Log sheets \$1.00 per set of 50 sheets.

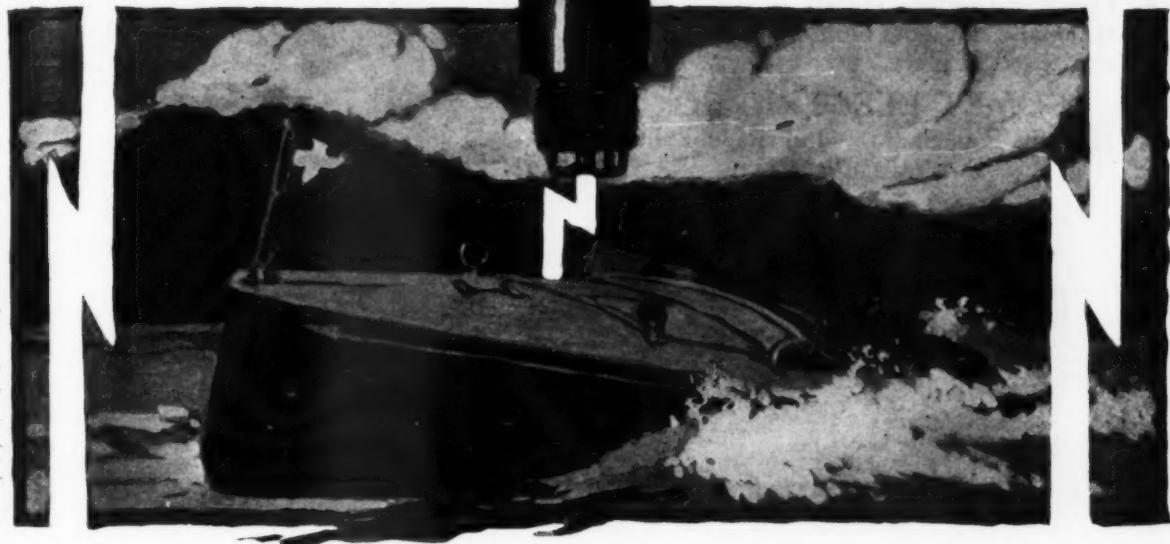
Loose leaf binders (canvas bound) to hold charts and log sheets, \$1.75.

Prices for all books of Practical Series, Ideal Series and V-Bottom Designs. Nine books in all.

If Purchased Separately..... \$15.00 If ordered all at one time..... 11.00  
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## THE PLUG YOU CAN DEPEND ON

A broken shoe-lace will halt the sturdiest athlete. A poor spark plug will cripple the most powerful motor boat. Avoid delays and inconvenience. You can now buy the Bosch Spark Plug—the plug that before the war won supreme leadership on account of its remarkable efficiency and long wearing qualities. It is now being produced with added features that make it even more dependable. Insist on getting the Bosch Spark Plug—whether you are buying a new motor boat or replacing plugs in the old one. The Bosch Plug gives maximum service at minimum cost. It insures easy starting, too. "The Bosch Spark Plug is as good as the Bosch Magneto."

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High-grade ball bearing generators built expressly for the motor boat trade in the following sizes:

6-8 volt 5 amp.	12-16 volt 5 amp.
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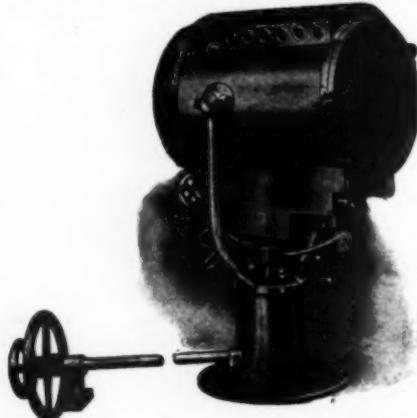
Comet generators are all equipped with automatic cut out, built in the machine and wired in place.

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have for years been the choice of careful motor boat and ship owners. Made in all diameters, from 7" to 60". Used on every size craft from motor boat and yacht to battleship and ocean liner.

*The Carlisle & Finch catalog of searchlights will be mailed to any boat owner, builder and marine architect on request*

**THE CARLISLE & FINCH COMPANY**  
261 East Clifton Ave.

## Single Handing It

(Continued from page 94)

Going anywhere away from the metropolitan centers of our coastline, the amateur boatman finds cheery goodwill among the dwellers and workers by the sea. The hand of friendship is extended to all who care to grasp it, but the solitary sojourner is in a position to derive greater comfort from contact with his chance acquaintances. He will be admitted as a fellow to the cabins and forecastles of men who know the lure and the treachery of the sea—and if he doesn't hear a chapter or two on the harrowing deaths and hairbreadth escapes of men who have single-handed it in the past he misses the best part of his cruise.

Fishermen and lobstermen and all others who cope with the sea in small vessels will deplore the hardihood (or foolhardiness) of one who "goes it alone," and they will cite unnumbered instances of men whose ace of self-reliance has been trumped by an angry wintry sea. But on this topic of the danger of single-handing it I find that it is possible to speak with some wisdom to two classes of humanity.

To those who doubt the advisability of venturing out without companionship I should say that there is no part of the navigation of a boat 30 feet and under which one man cannot accomplish unaided; and that given a due sense of caution, of mechanics, and some knowledge of meteorological phenomena (or willingness to abide by the knowledge of others) a man may cruise from Key West to Eastport without coming face to face with danger.

And to those who like a little spice in their viands I may remark that there is no sport comparable to shattering lances with Neptune in single combat. You leave each port aware that there is none behind to report your absence, none ahead to expect your coming, and perhaps none along the route to come to your assistance. Glancing up at an austere shore on one hand, and out to a horizon stretching a thousand leagues to an impossible landfall on the other, you realize that it's up to your own resource and sagacity to make a snug harbor for the night. And if you don't have at least one pleasurable thrill down your spine, and a feeling that all's right with the world, you have been miscast in the rôle of Lone Wolf.

## Lights for Your Boat Simplified

(Continued from page 20)

tirely around the horizon. The customary side lights are carried which show through 10 points from dead ahead to 2 points abaft the beam on either side. An additional distinguishing light which may be colored is used in congested waters to distinguish the boats of one line from those of another. For example, in New York Harbor, the Pennsylvania Railroad ferry boats carry a red light, Lackawanna boats a green light, and the Erie ferry boats a white light. Vessels operating as ferry boats and not of the usual double ended type carry the regulation lights of their class.

### HARBOR TUGS

See Figs. 38 and 40

There are two general types of tow boats. The one operating on the harbors and inland waters and the other, the sea-going type, operating off shore. The lights for harbor tugs are restricted to inland waters and rivers. These tugs carry the usual red and green side lights, and either two or three white lights vertically arranged showing all around the horizon, the number depending upon the length of the tow. If the tow consists of one barge then they carry two lights. Should the tow consist of more than two barges and the total length from the stern of the tug to the aftermost barge exceeds 600 feet then three lights are carried. The vessel towed if of the sea-going barge or other type not generally classified as canal boats, rafts, scows, etc., will carry the customary red and green lights. Barges, canal boats, and others of this type are especially provided for elsewhere.

### OCEAN-GOING TUGS

See Fig. 45

The lights carried by an ocean-going tow boat are generally similar to those carried by harbor tugs. The principal difference being that the white lights instead of showing completely around the horizon are arranged to show ahead only through 20 points. They are further carried in the forward part of the boat instead of at the stern. The regular red and green side lights are also carried and in addition a small white light showing astern only to help the helmsman on the towed vessel in steering. The difference between the lighting on ocean-going and harbor tow boats is identical with that on inland and ocean-going steamships. The range light on the harbor vessels will show entirely around the horizon while the ocean-going craft show their lights only through 20 points ahead of the boat.

(Continued on page 110)

**BET-R-BILT**  
TRADE MARK



## Combination Socket Wrenches

### *A Few Outstanding and Exclusive Features:*

**ADAPTABILITY** to reach and fit any nut, bolt or screw, no matter where located, on Motor Boat, Truck, Tractor or Automobile.

**PRACTICAL** in each and every combination.

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**COMPACTNESS** in design, occupying least possible space.

**USEFULNESS** to a greater degree than any other wrench now on the market, regardless of price.



### **BET-R-BILT** Combinations

The SCREW-DRIVER BLADE is hammered from a high CARBON TOOL STEEL, heat treated, then drawn to a fine temper, fits into the small socket of the KNULED HANDLE, and when used in combination as a SCREW-DRIVER is without EQUAL and fills a long felt want.

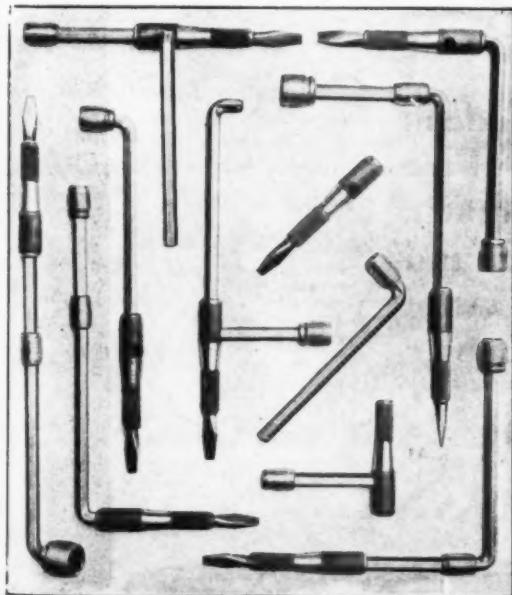
A steel ball backed up by a spring forms a friction bearing on each end of the lever and extension to prevent the sockets from coming off.

Levers fit all sockets.

The No. 1 set, with only twelve component parts, gives 125 distinct combinations. Instantly various lengths of shank or leverage can be obtained with either a T, offset or L handle.

The exclusive offset combinations, both with sockets or screw-driver, find great favor with the car owner and mechanic.

Below are pictured some of the combinations with which you may have any style of socket wrench or screw-driver at your disposal.



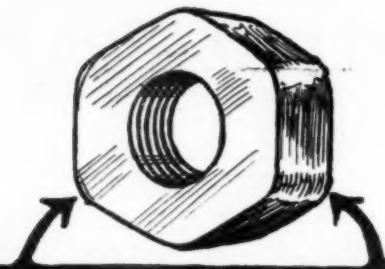
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Coes Wrenches are made to fit all the time. They have the backbone to do it. The jaws will not spread and wipe off the corners.



The steel handle model is made in seven sizes, from 6" to 21". Five solid parts make up the wrench. It is the logical engine room and machine shop tool. Why not ask your jobber? Or your dealer? Or us.



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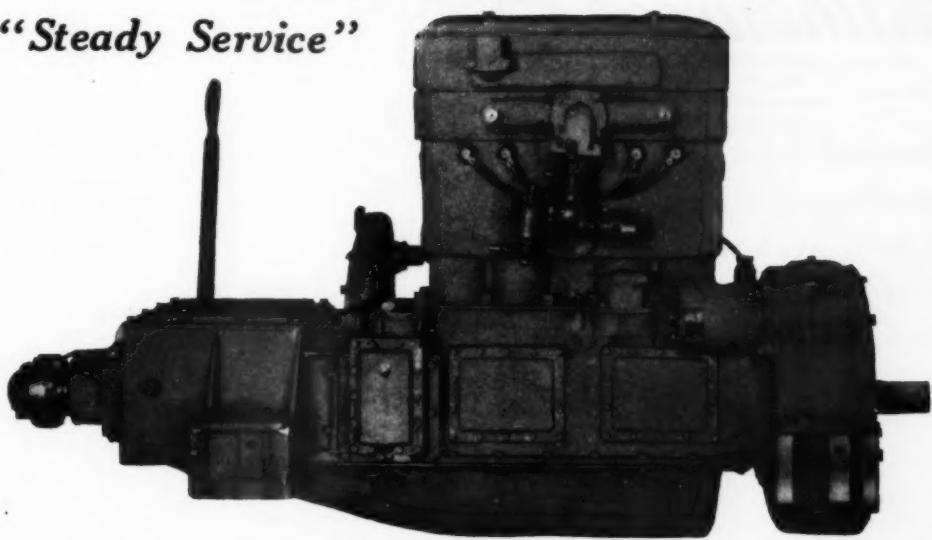
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Mass., U.S.A.

*Advertising Index will be found on page 130*



**"Steady Service"**



## For the "Man Behind the Motor"

In designing the new Knox 20 H.P. Marine Motor we have had in mind "the man behind the motor,"—usually the man who owns the boat, often the host of a gay party for whose complete enjoyment he feels responsible. He is the man who appreciates dependability, accessibility, simplicity of operation and freedom from annoyance.

Although built by one of the best known automotive engine plants, producing all types of gasoline engines, the Knox Marine Engine is designed especially for motor boats by men who own and operate motor boats. It is not a rebuilt automobile or truck motor. The reverse gear, starter, generator and other equipments are built in. Every moving part is enclosed. The internal feed pressure lubricating system takes care of every bearing, gear, shaft and other friction surface. Nothing is missing in the design or equipment.

Knox owners will operate and care for their motors themselves, by choice. Press the starting button, throw in your gear, set your throttle and you can forget the motor until you are beside the dock again. You will find it the acme of simplicity in maintenance as well as in operation. Extreme accessibility makes every necessary adjustment easy.

*Let us tell you the whole story. This is only a part of it.*

Four cylinders  
Bore 3½", Stroke 5"  
Valves in cylinder head  
Valve mechanism enclosed  
Removable cylinder head  
Single one-piece camshaft  
Heated intake manifold

Water cooled exhaust manifold  
Large drop-forged crank shaft  
Noiseless timing gears of special design  
Separate circulating and bilge pumps  
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High Tension magneto ignition  
Reciprocating parts carefully balanced  
Full pressure internal lubrication

**Price complete \$840.00 f. o. b. factory**

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206 Niagara Blvd. & Dunkirk N. Y.

### *Victory II the Cruising Champion*

*(Continued from page 18)*

real room, as large, light and cleaner than the average cabin. You can stand up and walk all around the motor. How one can cruise or even sail at all with an engine under a couple of cellar doors in the cockpit or housed in some other equally ungetatable position is beyond my comprehension. My motor always runs, starts and behaves generally like the ideal engine of your dreams, and so would most any engine if you gave it half a chance. I will guarantee the show engines are not any cleaner and if you want to do any work, it is accomplished twice as well in half the time without profanity because you have room and loads of it.

Before going on deck let me say that Victory is lighted by electricity throughout, from blinker light at masthead to a trouble lamp in engine room and including all cabin, toilet, galley, binnacles and running lights. Much of the wiring I did myself, and the switchboard with its two-way switches is the work of a shipmate friend. Current for storage battery is generated by a dynamo run from the shaft by silent chain and in addition to this I carry six dry cells so that I have two absolutely independent systems for any emergency. These are all wired to the switchboard in such a way that a turn of the two-way switch will take current from either source.

Space does not permit of a description of all the little devices used for one thing or another, but I must mention the engine ignition. In the modern high-grade motor there is generally but one thing to go wrong, ignition. Frankly, I am scared to death of motors, but I never let mine know it. Perhaps over twenty years of wind-jamming makes me distrust them, or more properly, the ignition. So I set out to make mine as near unstoppable as possible. In the first place, my Sterling was equipped with Bosch magneto and that is as near perfect as any ignition can be. This was wired to plugs over the intake valves and started on the coil. Well, I got a new set of caps tapped for spark plugs for the port or exhaust side and installed an Atwater Kent system wired to these. Now I can run on the Bosch or on the Atwater Kent getting my juice from either the storage battery or dry cells. Also I can have double ignition if I want it, but I don't, and the reason is the engine was not designed for it. Normally I run on the Bosch and it has never failed me yet.

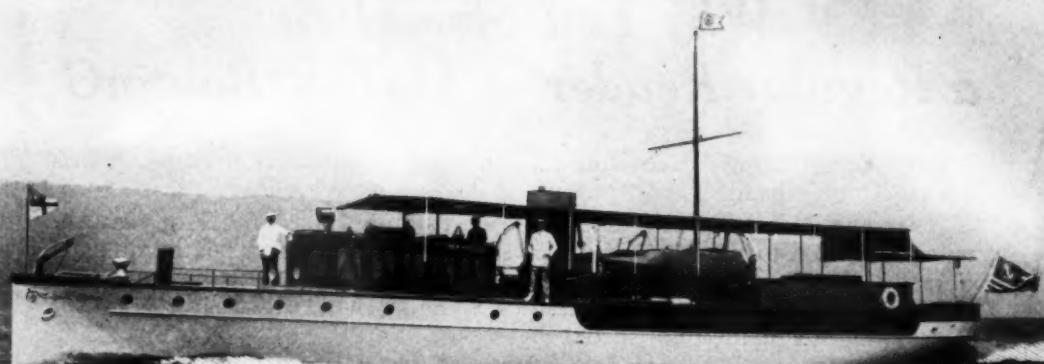
I also rigged up a water drip to the intake manifold and this has been a wonderful help in preventing carbon and giving additional power. The motor has no starter and consumes by actual closest measurement in a year's racing, cruising, etc., just 21-6 gallons per hour of the stuff they call gasoline and, including fresh oil in the base for each race, etc., some ten gallons of lubricating oil per season. I fitted a strainer on the gasoline such as they used in the 110-footers, and no matter how much water or sand they dilute the gas with I am never bothered. Then in the gasoline I have a shut-off at each tank, at the strainer and at the carburetor, which is Schebler model L.

On deck you will notice a scarcity of those fittings which are mostly efficient for breaking your toes as you go forward barefooted on a dark night to give her more scope. The cockpit, according to some ideas, is small but plenty large enough for a party of six or eight. The side seats cover the two gas tanks of 50 gallons, each draining overboard, and two wicker chairs are also carried. On the short after deck is another seat with back, etc., and all the seats are equipped with leather cushions and the floor with crex rugs. The outboard rudder is cut with foot holes for climbing aboard and so makes bathing steps unnecessary besides always being in place in case of accident.

The khaki awning has a projection forward to shelter the helmsman from sun glare and to some extent from rain. Side curtains and a forward drop with celluloid window also help in bad weather, and this is all the protection needed except for those who want to sail in limousine or sedan pilot houses, which to my mind are absolutely out of place on a small boat and indicate a degeneration in the breed of sailor men it is sad to contemplate.

A military mast of thirteen feet length enables her to pass under any bridge with 20 feet clearance. Anchors of the old-fashioned kedge type with manila cables are used. While more convenient to handle the stockless anchor pound for pound do not have the same holding power even when given greater scope. Rope, notwithstanding the bother of drying, I prefer to chain on account of its spring and lightness as well as being easier to handle alone. The single skylight over both galley and cabin with the ports afford ample ventilation and the side entrance makes the engine room cool at all times. Of course, she is screened throughout and otherwise carries every article of equipment necessary to cruise in comfort, but not an ounce of junk that cannot be used.

Such is a hasty sketch of the boat that has been more than a success in both cruising and racing for the four years I have sailed her and I never expect to see a better.



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**Express Cruisers**

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 CORPORATION  
 MORRIS HEIGHTS, NEW YORK CITY, U. S. A.

## Why You Should Be a Regular Reader of MoToR BoatinG

MoToR BoatinG each issue has more editorial pages devoted to the sport of motor boating than any other boating magazine.

MoToR BoatinG each issue has almost double the number of feature articles devoted to the sport of motor boating than any other boating magazine.

The following table will convince you that MoToR BoatinG is the best boating magazine published:

MoToR BoatinG	Motor Boat	Power Boating	Rudder	Yachting
(Average 1921 issues)				
Number of Editorial Pages 44	35	26	45	32
Number of feature articles dealing with motor boating subjects . . . . .				
22	12	12	14	7
Price per copy . . . . .	25c	20c	25c	35c

### The Quality of MoToR BoatinG is unquestionably the best also

Considering what you get in each issue of MoToR BoatinG it is the cheapest in price also. The remaining issues of 1921 will be even better. Every one will be brim full of interesting articles and useful information.

William J. Deed is designing an easy to build motor boat for us each month. The plans published will be complete in every particular.

MoToR BoatinG's Correspondence Course in Small Boat Handling is the Biggest Hit ever made by a boating paper. Already over 600 motor boatmen are enrolled. The lessons which will be published in each issue for the next twelve months will not fail to appeal to you. Don't fail to get every one of them.

And now for the biggest announcement we have ever made.

Early in April Alfred F. Loomis, well known to every one of MoToR BoatinG's readers, will start on a voyage in an auxiliary yawl which in distance would take him half way around the globe. He will cruise down the Atlantic Coast stopping at the principal ports of the United States, Mexico and Central America. He will

go through the Panama Canal and up the Pacific Coast making stops at all ports which are of interest to motor boatmen. Mr. Loomis is making this trip in the interest of MoToR BoatinG readers. We have contracted with him for ten feature stories. He will write exclusively for MoToR BoatinG. No cruising articles or stories of adventure which have ever appeared in any boating paper will compare with those which we will publish. Mr. Loomis' articles will begin in the May number of MoToR BoatinG.

All the other features which have made MoToR BoatinG famous will continue as usual. Our Prize Contest Department dealing especially with small boats will be more interesting than ever.

Our "Build a Boat" Department will mean thousands of new craft during the coming season. The Way We Would Do It pages will be brim full of practical suggestions. Our Charts for motor boatmen will continue.

The April issue alone, the Annual Fitting-Out Number, will contain many valuable hints and suggestions that will probably save you several times the cost of the entire year's subscription.

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**MoToR BoatinG, 119 West 40th St., New York, N. Y.**

Dear Sir:—

In order that I may not miss any of the Correspondence Course, the Wm. J. Deed Boat Plans, Mr. Loomis' Cruise Stories and the many other features you have planned, please enter my subscription for MoToR BoatinG for one year commencing with the April issue (Annual Fitting-Out Number).

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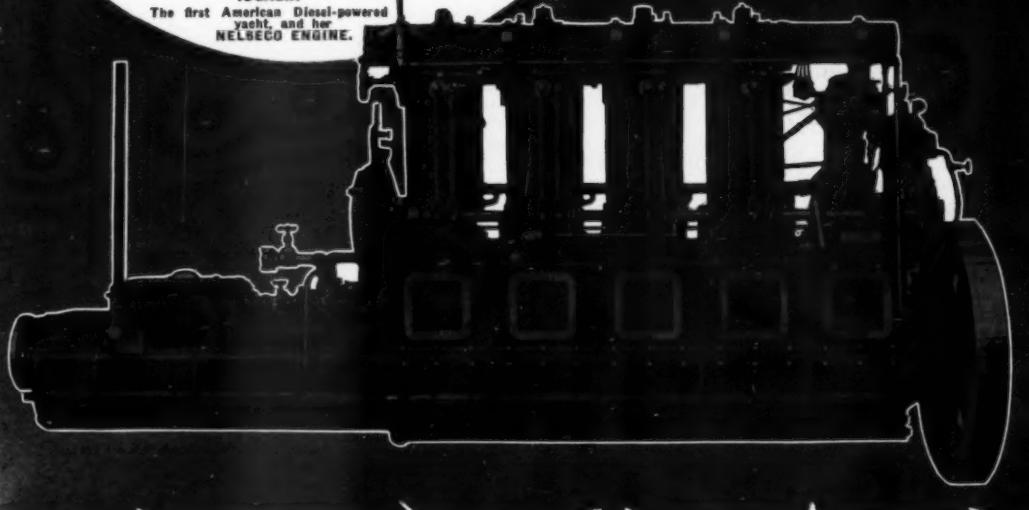
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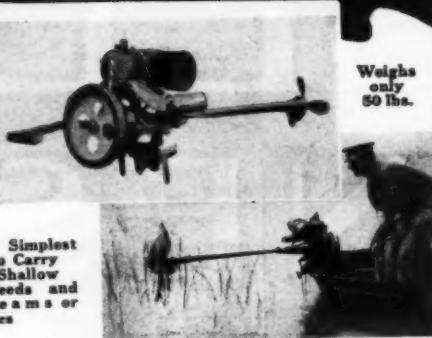


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Lightest Simplest  
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Convert your rowboat, canoe or tender into a real motor boat with a Gierholtt 2 H.P. Outboard Motor. It weighs only fifty pounds and provides a complete power plant that drives small boats along at lively speed.

The Gierholtt is the simplest motor than can be built. Battery or magneto ignition. The direct drive eliminates gears, complication, trouble and weight. It is easy to carry, attach, start, operate and steer. Quickly taken apart for packing.

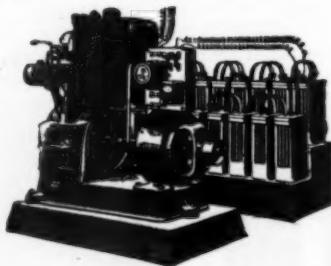
You can run at full speed in the shallowest water, without fear of weeds, sunken logs or rocks. The propeller is protected from damage. Should the propeller become fouled with weeds you can swing it inboard without removing and free it instantly.

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### Lights for Your Boat Simplified

(Continued from page 102)

#### CANAL BOATS AND BARGES

See Fig. 42

Canal boats and barges when operating on inland waters are provided with particular types of lights which will indicate to some extent their character. When being towed in tandem a white light is placed on the forward and after end of each barge and in addition the last barge in the tow carries two white lights arranged horizontally. All these white lights will show completely around the horizon.

Car floats which are used extensively in some parts of the country are heavy, unwieldy vessels which are towed by placing the tug between two barges. These are lighted by placing a white light at each outboard corner of the two barges. If only one barge is being moved then the lights would be placed on the two corners furthest removed from the tug. The tug itself will carry two white range lights indicating that the tow is less than 600 feet long, and the usual red and green side lights. In the event that the barge is of such a height as to obscure the side light on one side of the tug then this side light is transferred to the outer side of the barge.

Sea-going barges when towed in tandem as is customary will carry the regulation red and green side lights on each barge. The last one in the string will further carry two white lights horizontally arranged to show all around the horizon while the others will show a small white steering light at the stern. Ocean-going barges when towed alongside of the tow boat will carry the red or green light on the proper side if their height is such as to obscure the light on the tow boat.

#### PILOT VESSELS

See Fig. 35

When operating on their station and not at anchor pilot vessels will indicate their character by carrying in addition to the red and green lights two other lights on their main mast showing completely around the horizon. Of these the upper one is white and the lower one is red. When at anchor the pilot vessel continues to display the special distinguishing lights but extinguishes the red and green side lights. When not engaged in pilot service the vessel will carry the customary lights belonging to her class.

#### FISHING BOATS

See Fig. 30

All fishing craft will show the regulation lights similar to other vessels except when engaged in operating at their nets or trawls. Boats over ten tons when engaged in fishing will exhibit in some part of the boat where they can best be seen two lights. The upper one of these is red and the lower one is white. The vertical distance between them shall not be less than six feet, nor more than 12 feet, and the horizontal distance, if any, shall not be more than ten feet. These lights are visible all around the horizon.

#### LIGHTS FOR WRECKS

See Figs. 33 and 44

In case it is necessary to move a submerged wreck or other object at night special lights are carried by the towing vessel. The regulation red and green side lights are carried as well as four lights vertically arranged. The upper and lower of these are white and the two intermediate ones are red. These lights will indicate the fact that the object towed is not visible and to keep clear.

Wrecking vessels when moored over a wreck on which they are working will indicate the fact by displaying two red lights vertically arranged where they may best be seen in all directions. A white light showing all around is placed at the outside corners of each barge or vessel in the plant. Dredges when operating from a stationary position also display the same lights, that is, the two red vertical lights, and the white lights at the corners of the boats.

#### SPECIAL LIGHTS

See Figs. 36 and 47

There are numerous cases which are not covered by any of the foregoing statements and special lights are provided for these. A vessel which is not under control, for example, a steamer which may have lost a rudder can operate to some extent by means of its twin screws. It would indicate the fact by showing two red lights vertically arranged and the customary red and green lights. If she is not making headway through the water the red and green lights are not used.

Anchorage lights are commonly used and on all vessels under 150 feet in length, a single white light is sufficient. Vessels of greater length are provided with two lights, one forward and one aft. A vessel which has run aground will carry the regular anchorage lights and also two red lights vertically arranged. This last applies to International Rules only and in inland waters a vessel aground would show only the anchorage lights.

(Continued on page 114)

## "Adieu" Wins Fisher Trophy, and Sets New World's Record For Regulation Displacement Boat of 39.8 Miles Over Two-Mile Course



"Adieu" is a special 32-foot Gentleman's Runabout. Designed by John L. Hacker. Powered with a 6 cyl. 200-H.P. Hall Scott Motor. "Adieu" was shipped to Florida without builder's trial, and accomplished what she was designed and built for. All Hacker Boats make good.

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We have on hand two of our special 29-foot We-We Type. Can be powered with four or six cyl. Hall Scott Motors. Speeds not less than 32 and 36 miles respectively. These can be had at a reduced price.

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# MOTOR BOATING PRACTICAL HAND-BOOKS

Every motor boatman has long felt the need for a really complete and comprehensive library devoted to their favorite pastime—motor boating. One of the obstacles to the accomplishment of this important work was the difficulty in finding any one writer who could cover the field in its entirety. In presenting the new series of practical handbooks, MoToR BoatinG believes that the problem has been solved at last. These books are edited by Charles F. Chapman, M. E., the editor of MoToR BoatinG, and they are the results of months of untiring effort on his part, together with the best of thousands of suggestions sent to him by motor boatmen themselves. The list of the contents given below will give you some idea of the vast amount of ground covered by these volumes.

## Practical Motor Boats and Their Equipment

Volume 1.—The first volume tells you what the ideal boat for various kinds of service should be and what to look for in buying a boat. Many suggestions about decoration and hints on all kinds of equipment. All about steering gears, wireless outfits, electrical attachments, etc. Glance over the list of contents appended herewith: Hulls, Ballast and Seaworthiness; Round Bottom vs. Sharp Bilge; What are the Advantages of Flare? Raised Deck vs. Trunk Cabin; Best Proportion of Beam to Length; Selecting a New Design; The Advantages of Bilge Keels; Open or Solid Deadwood? What Makes a Hull Seaworthy? The \$1,000 Cruiser; Buying a Second-Hand Boat; Types of Bows and Sterns; Exterior Arrangement of Cruisers; The Best Cabin Arrangement; Finishing Up the Cabin; Changes in Interior Arrangement; Interior Arrangement for Open Boat; Propeller-Rudder Arrangements; Best Position for the Rudder; Advantages of the Outboard Rudder; Different Steering Positions; Steering Equipments for Motor Boats; Steering Gear for the Cruiser; The Steering Gear for a Runabout; Steering the Boat from the Side; The Electrical Equipment; Making and Wiring a Switchboard; Electric Lighting on a Motor Boat; The Inexpensive Lighting Outfit; Wiring the Small Cruiser; The Storage Battery; The Dynamo Cut-Out; Wireless for a Small Cruiser; Tender for a Thirty-foot Cruiser; Building a Folding Dinghy; Installing the Boat Boom; What is the Best Galley Arrangement; Ventilating the Galley; The Galley Stove and Its Installation; Making a Fireless Cooker; A Portable Cook Box; Running Water for the Cruiser; How to Build a Portable Table; A Table for the Open Boat.

## Practical Motor Boat Building

Volume 2.—As its title implies, this volume takes up the building of your own boat. It also covers the construction of the necessary fittings such as awning, windshield, etc. Every boatman sometime or other builds a boat, and a book of this kind will save much time and prevent many mistakes. List of contents: Types of Motor Boat Fastenings; Boat Building Woods; Laying Down a Boat's Lines; Converting a Trunk-Cabin Cruiser; A Steam Box for Amateur Builders; Joiner Between Stem and Keel; Fastening the Frames and Floors; Boring the Forgotten Limbers; Fitting the Garboard Plank; Boring the Shaftlog; Fitting the Stuffing Box; The Stern Bearings for a Cruiser; A Water-Tight Companionway; How to Canvas a Deck; Hinged Water-Tight Hatches; Making a Water-Tight Hatch; The Coaming of an Open Boat; Fitting a Swinging Port Light; Making a Self-Bailing Cockpit; A Water-Tight Window Sash; Making a Water-Tight Skylight; How to Build an Engine Housing; How to Make an Engine Cover; Building a Tool Locker; Constructing an Extension Transom; How to Make a Pipe Berth; An Ice-Box for a Cruiser; Installing a Toilet; How to Rig a Signal Mast; How to Make a Spray Hood; Fitting a Folding Windshield; An Awning for the Open Boat; A Cover for the Open Cockpit; Screens for the Side Light; A Support for the After Light; A Seat for the Man at the Wheel; Removable Davits for the Cruiser; The Boarding Steps; A Bow Rudder for Your Hydro; The Motor-Driven Club Tender.

## Practical Things Motor Boatmen Should Know

Volume 3.—Navigation is one of the important subjects covered in volume three of the series. Tells you how to steer, how to increase the factor of safety, and a host of other things relative to the proper running of your boat. The chart and compass are both fully explained in a clear and comprehensive manner. The list of contents will tell you more about it; Advice for the Beginner; Lessons Learned from Experience; Good Things to Know; Increasing the Factor of Safety; Which Way Should the Boat Steer? Why a Boat Steers Badly; Why do Boats Sag? Figuring the Boat's Speed; Ballasting the Cruiser; Getting Off Bottom; To Ride Out a Storm in a Motor Boat; The Why and How of Storm Oil; Preventing Fire; Handling Ground Tackle; Government Charts; Stowing the Anchor on a Cruiser; Diminishing Deviations; Preventing Electrolysis; Stowing and Using Charts; How to Make a Chart Case; Keeping a Motor Boat's Log; How to Make a Sextant; Tides and Tidal Waters; Taking Her Through the Canals; The Best All Round Dinghy; Towing the Tender; Handling the Dory in a Seaway; Getting the Tender Aboard; Planning for a Cruise; Equipping for a Cruise; Equipment for Offshore Cruising; Novel Events for Regatta Day; Handicapping; The Object of a Handicap Rule; Laying Off a Race Course; Measuring the Length of a Race Course; Preparing a Boat's Bottom for a Race; How to Build a Turning Buoy; Starting Boats in a Race; Stowing the Signal Flags; Fitting a Gun Mount; A Fish Box for Your Cruiser; A Cabin Wall Rack.

## Practical Marine Motors

Volume 4.—All about the marine motor; what it should and should not be. Tells why the automobile engine is unsuccessful in marine work. The best location for your engine, the ideal engine bed, the fuel tank, exhaust and countless other suggestions that will enable you to get the best results from your power plant. List of contents: Purchasing a Marine Motor; How Many Cylinders? Power per Cylinder; High Speed vs. Heavy Duty; Long Stroke vs. Short Stroke; Correct Motor Design; Changes in One's Power Plant; The Things that Cause Vibration; The Automobile Engine for a Boat; The Best Position for the Motor; The Ideal Engine Compartment; Placing the Engine in the Hull; Installing a Motor in a Canoe; Installing Power in a Yawl; Converting a "Bunker" to Power Engine Installation in a Hydroplane; Putting Power in the Rowboat; Limits of Shaft Inclination; Constructing the Engine Bed; Getting the Motor Aboard; Lining Up the Propeller Shaft; The Best Exhaust; Mufflers vs. Under-Water Exhausts; Installing an Under-Water Exhaust; Primary Batteries for Ignition; Keeping the Ignition System Dry; Installing a High-Tension Magneto; From Make and Break to Jump Spark; Installing the Gasoline Tanks; Taking Care of Extra Gasoline; Spark and Throttle Controls; Constructing a Rear Starter; Propeller for Engine and Hull; Installing a Universal Joint; Gearing Motor to Propeller Shaft; The Automobile Throttle; Harnessing the Main Engine; Rebabbitting a Worn Bearing; Should Fuel Line be Inside or Outside.

## Practical Motor Operation and Maintenance

Volume 5.—One of the most valuable books of the entire set. Your motor's ills and how to cure them. This volume tells you how to adjust your carburetor, how to fit piston rings, how to remedy poor compression and a number of other things that will enable you to doctor your own motor. List of contents: Locating the Motor's Troubles; The Overheated Motor; Starting in Cold Weather; Overhauling a Marine Motor; How to Save Fuel; The Fuel Situation; Using Low Grade Fuel; How to Run on Kerosene; Supplying the Fuel to the Carburetor; Adjusting the Carburetor; Cleaning the Fuel Tanks; Cleaning the Gasoline Line; Stopping Up the Leak in the Tank; A Home-Made Gasoline Gauge; Carrying an Extra Supply of Oil; Mixing the Fuel and Lubricant; Remedy Leaky Compression; Killing the Carbon Jinx; Tool and Spare Parts to Carry; Removing and Replacing Piston Rings; Repairing a Leaky Cylinder; Grinding a Motor's Valves; Setting the Valves; Timing the Ignition System; Cleaning the Water Jacket; Making and Fitting a Gasket; Patching Up a Bearing; Straightening the Sprung Shaft; Truing a Bent Propeller; Removing the Flywheel; Separating Couplings and Pipe Fittings; Changing the Shaft Hole Location; Utilizing the Exhaust; Disposing of the Bilge Water; Heating a Small Cruiser's Cabin; Operating the Outboard Motor; The Clean and Quiet Boat; Charging a Storage Battery; When the Motor Stops Unexpectedly; Making a Unit Power Plant.

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Volume 6.—This volume is an especially valuable one. You will find in it points covering the care of your boat that you never dreamed of before. Whether you are a beginner or a finished expert this book will give you a better knowledge of the handling of your craft than you can imagine. List of contents: Putting the Boat into Commission; Fitting Out a Thirty-Footer; Suggestions for the Beginner; Refinishing Bright Work; Keeping the Wood Surface Bright; Putting the Boat Out of Commission; Laying Up an Unsheltered Boat; Hauling Out for the Winter; Covering the Boat for the Winter; Launching from a Wharf; Correcting Faults; Lengthening Out the Boat; Mooring and Buoys; Taking Steps to Safeguard the Anchor; What to Use in the Bilge; Preserving the Wood in Boats; Emergency Rigs for the Cruiser; Auxiliary Sails for the Cruiser; Providing an Emergency Rudder; Preparing for Southern Waters; Stopping the Troublesome Leak; Replacing a Broken Plank; Removing Broken Lag Screws; Raising the Boat's Stern; Clearing the Propeller; Protecting the Bow and Stern; Open Boat Sleeping Quarters; Ventilating the Cabin of Small Cruisers; Converting the Open Boat to a Cruiser; Making a Cover for the Open Boat; Preventing Electrolysis; Building a Club Float; A Floating Boathouse; Constructing a Landing Stage; Building the Marine; Keeping the Thief Out; A Place for Your Shore Clothes; Stowing for Life Preservers; The Winter's Alterations; What Changes Shall I Make; The Satisfactory Bilge Pump; The Pressure Water System; Making a Pelorus; Your Storm Curtains; Life-Saving Equipment; The Absent Owner's Anchor Light; Mounting the Reverse Gear.

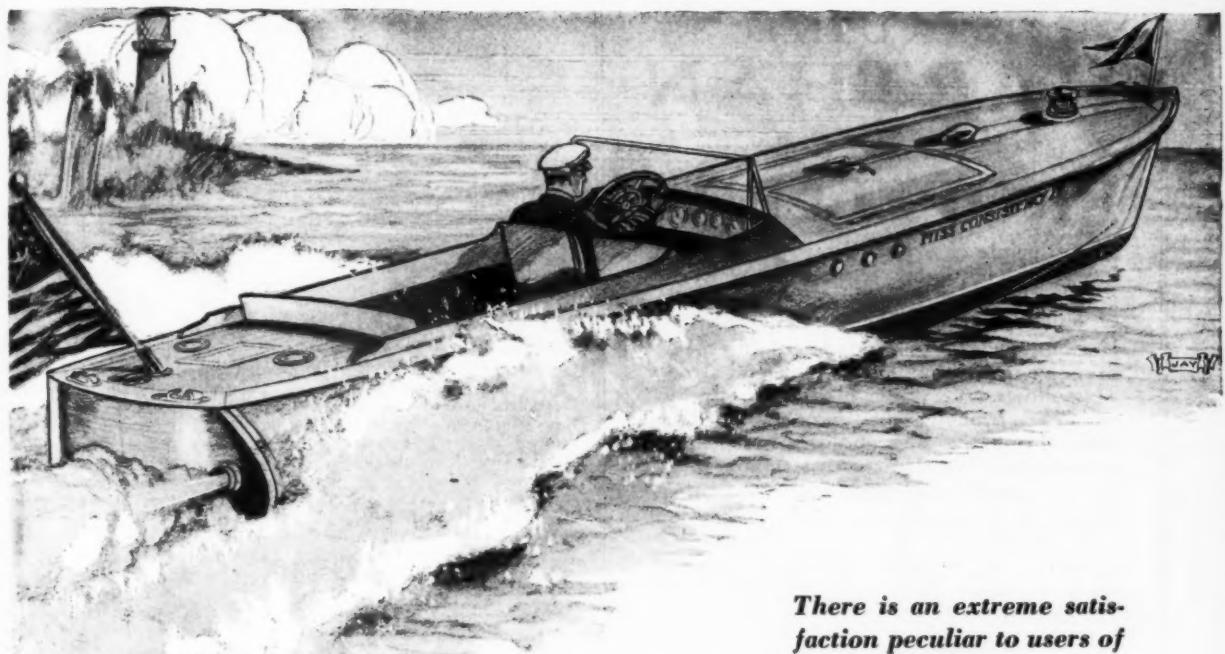
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**119 West 40th Street, New York**

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**Wisconsin**  
CONSISTENT

## MARINE MOTORS

Built in the following sizes:

EM—4x5	—4 cylinder
AM—4 $\frac{3}{4}$ x5 $\frac{1}{2}$	—4 cylinder
MM—5 $\frac{3}{4}$ x7	—4 cylinder
GM—4 $\frac{3}{4}$ x5 $\frac{1}{2}$	—6 cylinder
PM—5 $\frac{3}{4}$ x7	—6 cylinder

These engines express the owner's ideal—rugged, durable—insuring a safe performance always—dependably speedy and powerful, they embody the style and beauty that harmonize so well with prevailing hull designs. These satisfactory features account for the increasing demand for Wisconsin Marine Motors.

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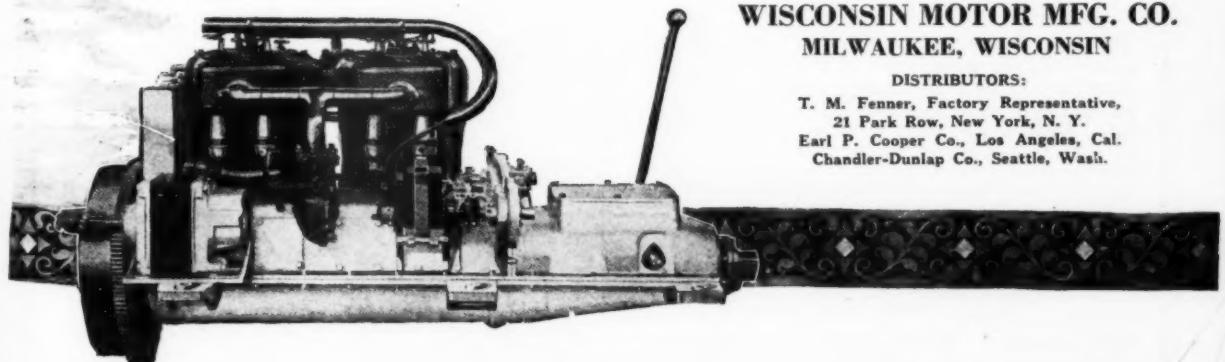
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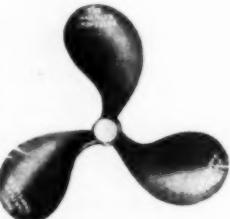
Harthan wheels are made of a special bronze composition, very tough and strong. This allows a very thin blade, the edges of which are brought down very sharp, which, with the extra high polish, reduces the power-absorbing element to a minimum.

We can supply propellers with two or three blades, in practically any pitch, either right or left hand.

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Mr. Joseph Leyare, well known among boat owners as the proprietor of the former Leyare Boat Works of Ogdensburg, has been retained as designer and superintendent of the motor boat department.

The personnel of this organization combines experienced administrative officers and boat builders of unusual skill.

*Let us figure on  
your 1921 boat.*

**HUFF, DALAND & COMPANY, Incorporated  
OGDENSBURG, NEW YORK**

Motor Boats Flying Boats Airplanes

## Lights for Your Boat Simplified

(Continued from page 110)

Draw-bridges and other fixed structures of this type are provided with special lights, the character of which is usually prescribed by the local authorities.

### SIDE LIGHTS SHOULD BE SCREENED

The regulations provide that the red and green side lights shall show from dead ahead to two points abaft the beam. The lens makers will generally provide a lens which will cover this angle. It is necessary that screens be fitted of specified sizes in order that these lights will not show across the bow. The light itself must necessarily be a small distance from the screen and the size of the lamp and reflected light all tend to make the light show across the bow. Care should be exercised and tests made to prevent this as much as possible.

### VALUE OF THE RANGE LIGHT

It frequently happens when a vessel's lights are visible in the distance that there is a reasonable doubt as to the course of this vessel. The relative location of the two range lights with respect to each other will prove to be the key to the proper determination of the other vessel's course. In a case where only one of the side lights of the other vessel is seen it can be assumed that you are within the 10-point sector of the other boat's side light. Whether the relative courses of the two vessels will bring them together or not will determine on the location of the range lights. Should the lower forward range light be to the left or right of the after range light the distance between them will indicate the approximate angle of the other vessel with your line of sight. From this you can gage its approximate path and act accordingly. Should the range lights be directly over one another then it can be assumed that the other vessel is approaching head on and danger of collision exists. When the course is changed ever so little the range lights will separate and a shift to starboard will show by the lower light moving to your left while a shift to port will show by the lower light moving to your right. Without the aid of these range lights a change in course of several points might be effected without becoming apparent to the observer of the side lights alone. Of particular value when the port light of a vessel shows is the relative location of these range lights. It can be safely assumed that the other vessel is in your danger zone and has the right of way over you. The location of the range lights will quickly determine his course and enable you to take the proper action to keep clear and allow him the right-of-way.

## Over 700 Enrollments in MoToR BOATING's Correspondence Course

(Continued from page 19)

your magazine. It is an opportunity for which many of us have been waiting for years."

O. Hille, New York, N. Y., not only enrolls himself but enters the names of his two sons also. "Enclosed please find card of enrollment for the MoToR BOATING Correspondence Course on which I take the privilege of entering my two sons in addition to myself, as they constitute my crew and express the desire to take advantage of the course."

Dr. H. E. Watkins of Muskegon, Mich., writes us among other things, "I should like to have your certificate to display aboard the motor cruiser that, I hope, is coming some day."

William C. Allen, Palatka, Fla., writes this: "The offer as published in the February issue is most generous and each and every operator of small pleasure craft should avail himself of the opportunity."

Karl Wunsch, Bridgeport, Conn., says: "I think this course is a grand idea."

William W. Robson, Oakland, Cal., writes us from the Pacific Coast as follows: "I wish to congratulate you in taking up the matter in such a plain, comprehensive manner. The knowledge gained from such a course will do much to improve the seamanship of many. It is an excellent move for the safety of lives, property and the betterment of all amateur boating generally."

T. McElveath, Jr., of Chicago, enrolls with the following remarks: "Please enroll me as a student of your Correspondence Course. I am confident the course will be a great success and will be highly appreciated."

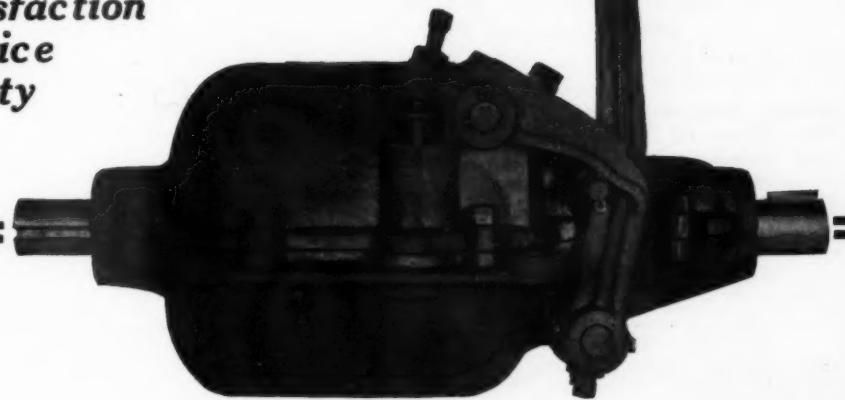
Edward F. Abbott of Philadelphia, Pa., writes as follows: "Will you kindly enroll me in MoToR BOATING's Navigation course. I am a steady reader of MoToR BOATING and am for better navigators of motor boats."

On account of receiving so many enrollments, it will be necessary to appoint more examiners than we had originally planned. While we cannot announce definitely as yet the names of all those who will examine the answers, yet the following have been asked to serve: Dr. A. B. Bennett, Washington, D. C., M.

(Continued on page 116)

# This Time Get A STANDARD Reverse Gear

*if you want  
Satisfaction  
Service  
Safety*



IT will soon be time to overhaul your boat and engine, and get your whole outfit ready for the coming season. How about your old reverse? Are you going to struggle through another year with a noisy power-wasting gear, or a slipping clutch, or a gear that breaks down at the most critical times?

Perhaps you are getting a new boat or engine. You've probably spent hours studying engine catalogs and boat plans. Don't neglect to give a thought to the proper gear. Select it with the same care as the engine. Remember, the safety of your boat often depends on the reliability of the reverse gear.

Study the leading gears impartially and we are satisfied you will select a Standard Gear. For one thing it is a complete unit, all enclosed and high grade in every respect. Made of the finest materials money can buy and built with an unusual degree of accuracy in one of the best equipped plants in the marine industry.

The oil tight case of the Standard makes it possible to operate the gear in a bath of oil. Wear and depreciation are practically impossible. Noise and vibration are avoided. Power is transmitted without loss. Large friction surfaces make the clutch take hold smoothly and hold on to the load without slipping. Adjustments are quickly made on the outside. Ball thrust bearing is built into the case.

Let us tell you the whole Standard story. Don't decide on any gear until you have this. Write today for catalog and complete information.

*Catalog and prices on request*



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Let us work or treat your own bushings of any material, Babbitt, Cast Iron, Bronze, etc., for any service anywhere. Absolutely no hot boxes with loss in valuable Babbitt metals and incalculable loss of time, etc., re-babbitting. You will save 80% in lubrication oils. 300% increase in the life of your bearings. 50% to the life and service of your belting. Reduces friction in bearings with great economy in power and fuel. Overcomes saturation of machinery and workmen with a great gain in output from them.

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Oil, Gasolene or Gas engines to operate on crude oil to gasoline, two cycle or four cycle, and for any purpose from farm engines to airplane engines. Let us check over plans now made. We often find suggestions which will repay you many times our small fee.

### Inventors—We Design, Develop and Superintend

The construction of your first machines and put them on a manufacturing basis.

**Models, Patterns, Specifications, Jigs, Fixtures, Dies, Plans of Tractors, Marine Engineering and Installation of Engines and Equipment, Aviation Engines, Water Systems, Lighting, Fuel Tanks, Separators, Piping, Shop Buildings.**

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## Over 700 Enrollments in MoToR BOATING'S Correspondence Course

(Continued from page 114)

N. Price, Baltimore, Md., M. Belknap, Philadelphia, Pa., H. Anderson, New York, N. Y., S. Cohn, New York, N. Y., H. A. Jackson, New York, N. Y., T. I. Coe, New Rochelle, N. Y., John K. Murphy, New Haven, Conn., F. P. Huckins, Boston, Mass., F. P. Husted, Albany, N. Y., and G. W. Schaeffer, Chicago, Ill.

Now a word about the answers. The questions on Lesson No. 1 (February issue) are published in this number of MoToR BOATING. There are 35 of them. Most of these can be answered in a few words, many of them by simply "yes" or "no". In answering the questions, we want you to use your own language and method of expression. We don't care for the rule or law word for word, simply your own idea expressed as you see fit. The questions are numbered and in answering them use the same numbers.

Your answers should be sent to the Editor of MoToR BOATING, 119 West 40th Street, New York, N. Y. If possible the answers to Lesson No. 1 should reach us sometime during the month of March. If for any reason you can't get them to us by then, later will do. Our only aim is to be of real service to those enrolled. We know the motor boatmen of the country are going to cooperate with us and we intend to cooperate with them.

If you have not already enrolled in the Correspondence Course and care to, it is not too late. All you have to do is to send your name to the Editor of MoToR BOATING. There is no charge now or later.

After the publication of the last article or lesson, those who have received a mark of 80 percent or better will be entitled to a MoToR BOATING Pilot's Certificate, suitable for framing, signed by the members of the Examination Committee and the Editor of MoToR BOATING, certifying that the one in whose name the Pilot's Certificate is issued has pursued the MoToR BOATING course in Seamanship, Piloting and Small Boat Handling, and by applying the knowledge gained is capable of handling a motor craft on the coastwise and inland waters of the United States.

### Questions for Correspondence Course—Lesson No. 1

(Published in February MoToR BoatinG)

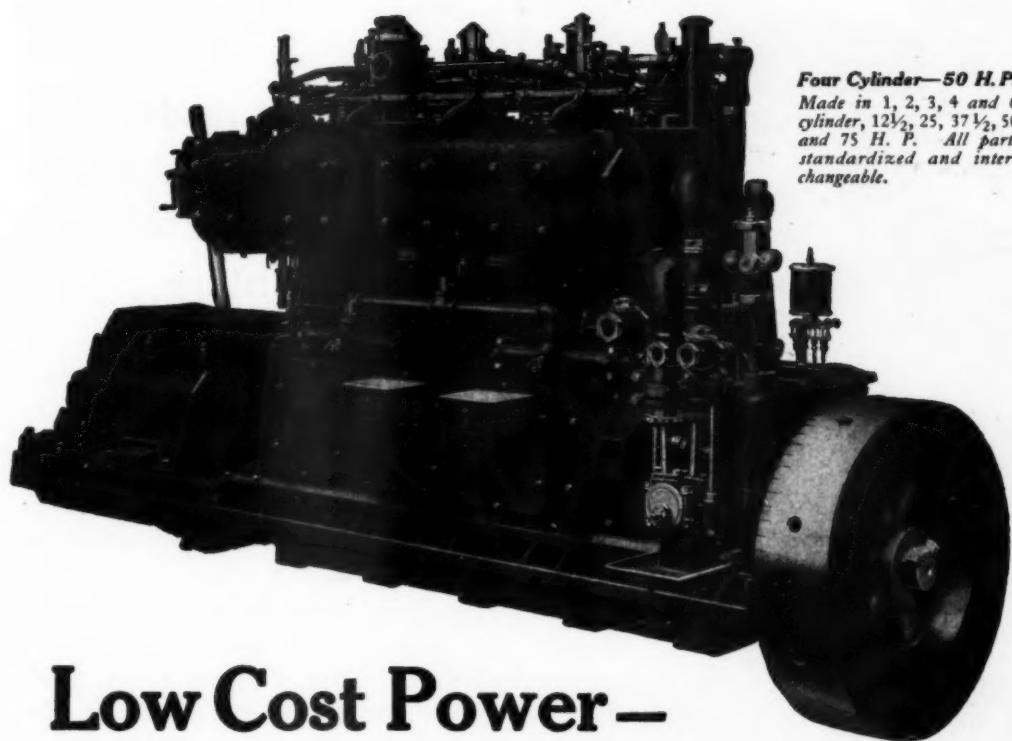
Rules of the Road, Rights of Way, Proper Whistle Signals, Duty When Underway, Day and Night Sailing

Answers should be sent to the Editor of MoToR BoatinG, 119 West 40th St., New York, N. Y.

- What are the objects of the rules of the road?
- When do the rules of the road apply?
- When is a boat underway?
- Is a boat adrift subject to the rules?
- Is a boat not under control subject to the rules?
- To what type of boats or vessels do the rules apply?
- If there is doubt as to whether the rules apply in any particular case should you consider that they do?
- What is the boat called which has the right of way?
- What is the boat called which does not have the right of way?
- What is the duty of the right-of-way boat?
- What is the duty of the burdened vessel?
- (a) Is a departure from the rules ever allowed?  
(b) When? (Give an example in your own words.)
- Is there any special burden placed upon motor boats when there is danger of collision with a large commercial boat? Explain.
- What is your idea about the proper speed of motor boats?
- What are the rights of fishing vessels?
- When should whistle signals be given?
- When should passing signals be given on?
- Must a whistle signal be answered?
- When is a signal of one blast given?
- When is a signal of two blasts given?
- When is a signal of three blasts given?
- When is a signal of four blasts given?
- What do you do if you do not understand a whistle signal?
- What is a cross signal?
- What do you do if a cross signal is given?
- Are a vessel's rights altered by whistle signals?
- (a) If a boat gives you a signal which is in violation of your rights, what do you do?  
(b) What should the other boat do?
- What whistle signals and action are proper for boats
  - meeting head on?
  - crossing obliquely?
  - courses in opposite direction but parallel?
  - courses in same direction but parallel?
  - overtaking?
  - both crossing and overtaking?
  - boats backing?
  - boat coming out of slip?
  - boats meeting in winding channel?
  - motor boat meeting sail boat?
- What special precaution is to be taken when a boat is operated by both sail and power at the same time?
  - in the day time?
  - at night?
- What are the rights and duties of two boats with a tow?
- What is one's duty in case of collision?
- Should whistle signals be given when there is no danger of collision?
- What is the danger zone—where is it—what should a boat do if it is in your danger zone?
- Do war vessels have any special rights?

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**Four Cylinder—50 H.P.**  
Made in 1, 2, 3, 4 and 6 cylinder, 12½, 25, 37½, 50 and 75 H. P. All parts standardized and interchangeable.

### Low Cost Power—

DODGE heavy oil engines are simple, durable and remarkably efficient. The fuel is fed by gravity. No high pressure pump for injecting and atomizing the oil is required or used. Electrical ignition, batteries, carburetors and other delicate electrical attachments necessary to the operation of

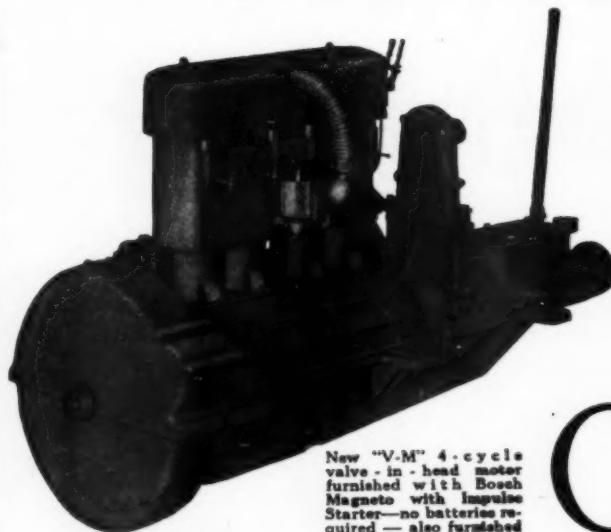
gasoline engines are entirely eliminated. It starts by compressed air; *no pre-heating by torch or electrical device*; no fire hazard. The fuel admitted is controlled by governor and supplies the proper quantity for the power demand. There are no small or delicate parts in Dodge engines.

*It is to your interest to get all of the literature on these remarkable engines.*

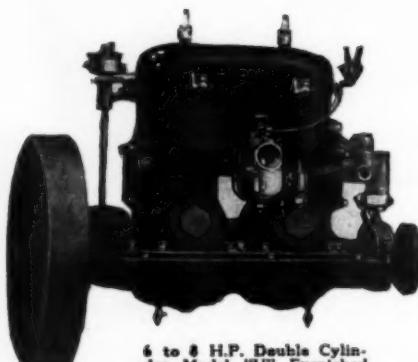
**Dodge Sales and Engineering Company**  
Mishawaka, Indiana, U. S. A.

# Gray Marine Motors for 1921

*"the engine with the big crank shaft"*



New "V-M" 4 cycle valve-in-head motor furnished with Bosch Magneto with Impulse Starter—no batteries required—also furnished with Electric Starter.



6 to 8 H.P. Double Cylinder Model "U" Furnished With or Without Reverse Gear



Selected for Canoes, Row Boats and Small Launches.  
3-8 H.P. 2-cycle Gray Motor. Standard the World Over.

This new model V-M 4 cycle engine marks an epoch in Marine Motor History

OVERHEAD valve marine-motors are acknowledged to be of greater efficiency and power than other types and in the Gray the ultimate in valve-in-head marine motor perfection has been attained.

The Gray is designed to operate on either gasoline or kerosene, it cannot backfire, it burns the fuel keenly with practically no carbon, soot, smoke or odor and lubrication troubles are unheard of in the Gray.

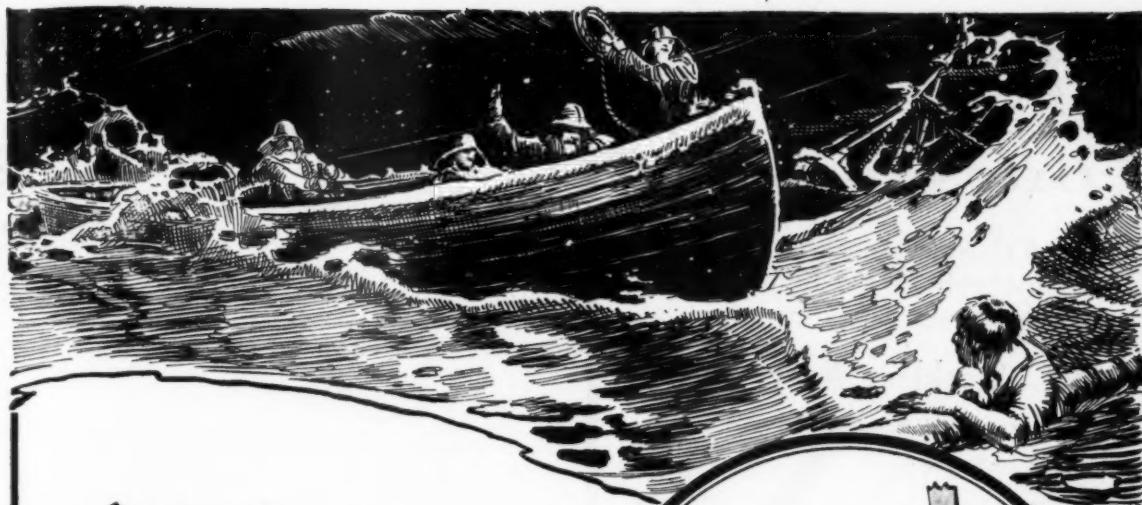
Our Hot-Spot Cylinder Head gasifies thoroughly the fuel used and renders it completely combustible.

Gray Two-Cycle Motors are built in models from 3 to 8 h. p. Gray Four-Cycle Motors are built in three sizes, 10 to 50 h. p. Write for FREE catalog.

You can place your order now for shipment next spring or sooner, and should the price of labor or material be reduced, we will give you the benefit of the same.

By having your order on our books now, will guarantee delivery when you require your engine, and at the same time you are protected in price.

**GRAY MOTOR COMPANY** 2106 MACK AVE., Detroit, Mich.



## Astern In 48 Seconds

"ON three different occasions, in the self-righting, self-bailing life boats of the service, I have tested the backing power of Joes Gear, and have had the boat going astern in 48 seconds from full speed ahead, this included the time necessary to throttle the motor down and shift the gear.

The boats are powered with a 40-45 H.P. Holmes Motor, and weigh about 15,000 lbs."

(Signed) John S. Miller,  
Repairman of Motor Boats, United States  
Coast Guard.

Wherever prompt action is demanded, Joes Gears prove their superiority. They take hold with a high ratio of reverse speed that gives you the maximum of backing power the instant you throw the lever. Yet they work so smoothly that you can reverse from full speed ahead to practically full speed astern a thousand times a day without shock to your engine or damage to your gear.

### Send for Joes Catalog

Describes Joes Gears for every need and speed; also Joes Reliable One-Way Clutches and Safety Rear Starters.

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# JOES REVERSE GEAR

FOR EVERY NEED AND SPEED

80%-88% Reverse Speed Ratio



**Bites Instantly**

The WC Navy Anchor takes hold at the first pull of the cable, and the harder the tug, the firmer the hold.

**WC Stockless Navy Anchor**

Solid wrought iron shank; free from "pin hole." Lies in holding position at angle of 55° to flukes, per Navy Specifications. One piece head; no mud gathering pockets. Tripping fin on head absolutely prevents dragging flukes up. Heavily galvanized by hot process. Proper shackle furnished. At your dealer's or write us.

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REG. U. S. PAT. OFF.

**75 H. P. LIGHT WEIGHT ENGINE**  
AN UNUSUAL ENGINE FOR UNUSUAL BOATS

If an engine of the highest quality—one which is efficient, reliable, and clean-cut in appearance—interests you, investigate the Sturtevant E4.

Built on special order during the past six years.

Now standardized and ready for general distribution. Catalog No. 26826

PARR-LOICHOT ENGINE CORP., Agents  
380 Canal Street New York City

**B. E. STURTEVANT COMPANY**  
HYDE PARK, BOSTON, MASSACHUSETTS

**Porpoise, a 20-Foot Auxiliary Catboat**

(Continued from page 29)

inches, spaced one at each frame, crowned 1 inch. To be halved over clamp and fastened to same by long galvanized boat nail. Beam at frame No. 3 to be 2½ inches x 2½ inches.

**Sill:** On inboard ends of deck beams as indicated shall be fitted a 2-inch x 2-inch oak sill into which beams shall be dovetailed and fastened. Ends of sill to be dovetailed into beams at each end, one at forward end of house at frame No. 3 and one at aft end of house at frame No. 11.

**Cabin Trunk Sill:** To be of oak 1¼ inches wide by 2 inches high securely fastened to sill below and laid on strip of cotton soaked with white lead. To be rabbedeted to take ¾-inch house side. To extend across front and along sides of house.

**Cabin Trunk Sides:** To be ¾-inch cypress, in not over three boards, ends of boards to be fastened by brass screws to 2½-inch x 2½-inch oak corner posts forward, lower edge of lower board fastened to rabbedeted sill by brass screws spaced about 8 inches, heads of all fastenings countersunk and wood plugged. In the middle of the lower board 5/16-inch birch dowels to be fitted and in other seams between boards similar dowels to be fitted every 12 inches. Seams to be tight and boards fitted together with liberal coating of white lead between boards with light thread of cotton laid in same. Galvanized hinged open ports of diameters indicated to be fitted in sides and forward end. Oak reinforcing pieces 1¼ inches x 2 inches to be screwed in place as indicated.

**Cabin Trunk Beams:** To be oak sided 1½ inches, molded 1½ inches, spaced and crowned as per plan. To be fastened to ¾-inch piece screwed to house side and also fastened to house side.

**Cabin Trunk Top:** To be ¾-inch tongued, grooved, and V-d cypress, pine, or cedar, nailed to beams, heads punched in under flush, putted, surfaces smoothed with plane, painted thick coat of lead paint and covered with 8 oz. canvas in one piece, canvas smoothed carefully so that it adheres to the whole surface and is saturated with the paint, edges turned down and tacked, tacks covered by 1-inch oak half-round, canvas turned up at companionway for watertightness and edge covered by quarter-round oak.

**Deck Planking:** To be ¾-inch white pine laid with narrow strakes, fastened to deck beams, seams to be tight, caulked with yacht cotton, payed with paint, and filled flush with seam composition, marine glue, or similar seam filling if deck is to be finished bright, or smoothed and canvased as desired.

**Cockpit Floor Beams and Floor:** Beams to be oak 1¼ inches x 2 inches, spaced one at each frame, no crown. Hatch openings and hatches to be framed out with oak of the same size. Hatch framing in removable hatches to rest on framing in floor at hatch opening by slightly beveling the adjoining faces so that the weight is not taken on the ends of the flooring, but on the deck frame.

Beams at forward and aft ends of engine box to be 2½ inches x 2 inches.

Floor to be 7½-inch tongued, and grooved white pine.

**Box over Engine:** Frame to be oak 1½ inches x 1½ inches. Cover to be framed out in pieces of the same size. Cover to be 1-inch oak. Sides to be ¾-inch t. and g. white pine. Sides to be screw fastened to 1¼ inches x 2 inches rabbedeted sill.

**Cockpit Coaming:** To be of cypress ¾ inches thick screwed to filling piece against clamp. Cap on coaming to be 1-inch x 1¼-inch oak.

**Sheer Ribband:** At sheer an oak half-round 1¾-inch face to be fastened by long galvanized nails with heads countersunk and wood plugged.

**Rail:** Mounted on deck shall be an oak rail 1½-inch thick, molded as per plan, to be secured thru deck by long ¾-inch galvanized drift bolts.

**Bulkheads:** To be ¾-inch t. g. and v-d cypress.

**Cabin Transoms and Cockpit Seats:** To be constructed of oak frame and cypress staving as per plans. Partition next to exhaust to be covered with asbestos board and zinc.

**Boxes for Stove and Locker:** To be constructed of 1-inch oak with 1-inch x 1¼-inch framing. Stove box to be lined with zinc.

**Rudder and Tiller:** Rudder to be 1½-inch oak, pieces composing same to be well fastened together by ¼-inch diameter galvanized iron dowels. To be hung on No. 5 galvanized screw rudder braces. To have ¾-inch brass pin at heel of rudder fitted into 2-inch x ¾-inch brass strap on keel and held by brass cotter pin.

Tiller to be oak or ash 1½ inches square where secured to rudder and 1½ inches diameter forward of rudder. To be securely screwed to rudder and reinforced by two 3-inch x ¾-inch thick galvanized straps screwed to rudder blade and to tiller. Aft edge of rudder to be neatly tapered to reduce eddy making.

**Companionway:** Door sill and jambs to be 1½-inch oak. (Continued on page 122)



**DOMAN**  
OSHKOSH, WIS.

**Install A Motor In Your Boat  
That You Know Some-  
thing About**

Boat owners are realizing more and more that the purchase of an unknown or cheap motor is *false economy*. This explains why the number of boats equipped with Doman Engines increase every year.

Reliability is the prime requisite in a marine engine and Doman Engines are known everywhere for their steady and persistent performance. Doman Engines have been time tried and proven for over twenty-seven years. They have made good throughout all this period because of correct design and in-built qualities—and the Doman Engine today is better than ever.

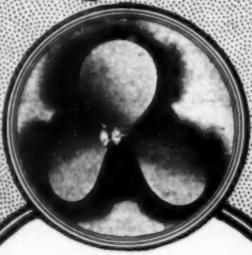
When you equip your boat with a Doman Engine you have that contented feeling that comes with the ownership of something fine. You know that your boat will go whenever and wherever you please to take it. And there is no guesswork about it bringing you back.

If you are figuring on a new boat or the refitting of your present one you will do well to investigate the Doman Engine. Write for specifications and our other valuable marine engine data.

Doman Engine Division  
**UNIVERSAL PRODUCTS CO.**  
OSHKOSH, WISCONSIN  
*Also Builders of the Universal Products Isolated Lighting Plants*



## Columbian Bronze Propellers



HAVE you a propeller problem? If you have, why not tell the Columbian Engineers about it? Their experience and knowledge is at YOUR disposal. They want to help you choose the right wheel for your boat, the propeller which will make your boat go faster and get the utmost efficiency out of your power plant. Write them about it today.

COLUMBIAN BRONZE CORPORATION  
522 Fifth Avenue New York City  
For New York Local Sales Only: 44 Third Ave.



### Porpoise, a 20-Foot Auxiliary Catboat

(Continued from page 120)

Doors to be 1-inch frame with  $\frac{3}{8}$ -inch panels, two sections of door to lift out of groove in jambs, joint to be halved, with upper door overlapping lower section as shown. Flush ring to be fitted in each door.

Slide to be constructed as shown and to be fitted with galvanized hinge hasp and padlock.

Mast, Spars, Sail and Rigging: Mast and spars to be Oregon pine or spruce of dimensions shown.

Sail to be of 8-ounce duck made in the best manner; to have single reef provided. To have mast hoops on mast. Sails laced to boom and gaff.

Rigging to be as per plan. Standing rigging to be plough steel galvanized wire rope spliced over shoulder on mast and over thimble to turnbuckle at deck. Running rigging to be best manila rope of size shown. All blocks to be ash shell, roller bushed, attached to spars with  $\frac{3}{8}$ -inch galvanized shoulder eye bolts.

All necessary cleats, sheet traveler, cheek halyard blocks, fairleads, etc., to be provided and fastened in place.

Cushions: To be  $\frac{3}{4}$ -inch khaki covered, kapoc filled, reversible cushions.

Plumbing: Bow type water closet to be installed under seat in forward end of cabin.

Enamelled iron sink 12-inch x 12-inch x 6 inches deep to be installed under cushion in transom top. To be drained thru  $\frac{3}{4}$ -inch iron pipe into galvanized iron tank of size shown.

Rotary hand pump, smallest size, to be mounted on bulkhead and piped to bilge and to waste tank; shut-off in each pipe line.

Fuel Tanks: Under seats in cockpit shall be installed one 10 inches x 24 inches and one 8 inches x 48 inches seamless steel tanks complete with vent, filling pipes threaded into bushing on tank and into deck plate in seat top, gasoline cock at outlet, and strainer, and  $\frac{3}{16}$ -inch copper tubing feed pipe to motor. Tanks to be set in pine cradles securely braced against shifting, held down by galvanized iron or steel straps, and placed so that the seat does not rest on the tank.

Awnings: Stanchions to be portable. To be  $\frac{1}{2}$ -inch galvanized pipe fitted into stanchion sockets on coaming and on deck with cotter pin under upper socket through stanchion to prevent slipping up. At top of stanchion eye to be fitted. Awning to be of 10 oz. duck with reinforced edges, fitted with strong snap hooks to snap into eyes in stanchions, awning having been stretched over boom and furled sail. On two forward and two aft corner stanchions eyes are to be provided with  $\frac{1}{2}$ -inch manila rope guys that can be led to cleats on the cabin trunk and aft deck to stretch awning taut.

Hardware and Equipment: Galvanized 4-inch chocks at bow. Galvanized  $2\frac{1}{2}$ -inch chain deck pipe. Galvanized 6-inch deck plate. Galvanized  $5\frac{3}{4}$ -inch bitt. Two 4-inch galvanized ports. Four 6-inch galvanized ports. Five brass flush rings  $1\frac{1}{2}$ -inch x  $1\frac{3}{4}$ -inch. Nine galvanized  $4\frac{1}{2}$ -inch cleats. Nine pair brass fast join butts 2 inches x 2 inches for locker doors, seat cover, etc. Seven brass cupboard catches  $1\frac{1}{2}$  inches x  $1\frac{1}{2}$  inches for locker doors. One dozen 1-inch brass cup hooks. One dozen brass coat and hat hooks. 24-inch sheet traveler, galvanized. One 8 foot boat hook. One 4-inch liquid compass. Two double cheek halyard blocks. One lignum vitae mast truck with flag halyards and 3-inch galvanized cleat on mast below gooseneck band. One  $1\frac{1}{2}$ -foot x  $2\frac{1}{2}$ -foot American Yacht Ensign. Fog horn. One 30-pound kedge anchor and sufficient manila rope cable to suit local conditions. Two 30 ft. 1-inch diameter manila tie lines. Fog bell, 6-inch size. Whistle of your selection. Pilot rules. Fire Extinguisher. Six life preservers. Set of oil running and anchor lights with light screens, etc.

Painting and Finish: Entire interior of hull to receive two coats of priming paint.

Exterior of hull to receive one coat of priming paint and at least three coats of yacht white above the water line and at least two coats of anti-fouling copper paint below the water line.

Cabin interior to be finished in at least four coats of flat white with trim of oak or cypress to suit taste. All interior natural finish to be given two coats of interior varnish.

All exterior natural finish to be given three coats of spar varnish.

Deck and cabin top to be given coat of priming paint and three coats at least of salmon or gray paint.

All flooring, lockers, space under transom, etc., to be bored with holes about  $\frac{1}{4}$ -inch diameter for ventilation. All spaces to be cleared of chips, shavings, dirt, etc., before final painting, and painting to be done with surfaces in dry condition without saw dust and dust blowing about.

Motor: Complete motor installation, propeller, etc., to be done in accordance with instructions from the manufacturer of the motor installed.

# The Boat for Shallow Waters



For downright enjoyment and all around utility there isn't any type of boat that will give you so much satisfaction and service as the **DISAPPEARING PROPELLER BOAT**.

The safest, most seaworthy boat of its size ever built. Makes 9 or  $9\frac{1}{2}$  miles an hour and goes 20 to 25 miles on a gallon of gasoline. Takes you anywhere there is water enough to float a rowboat.

The boat for bays, harbors, lakes, rivers, creeks and summer homes. The boat for campers, hunters, bathers, fishing parties and all family use. Costs little to buy and little to run.



UNIVERSAL KNUCKLE  
PROTECTIVE SKEG

The propeller is protected by a skeg. When this skeg touches any obstruction it moves the propeller up into the well as shown, and automatically throttles down the engine. When you beach the boat the propeller takes care of itself. The propeller amidships stabilizes the boat like a center-board.

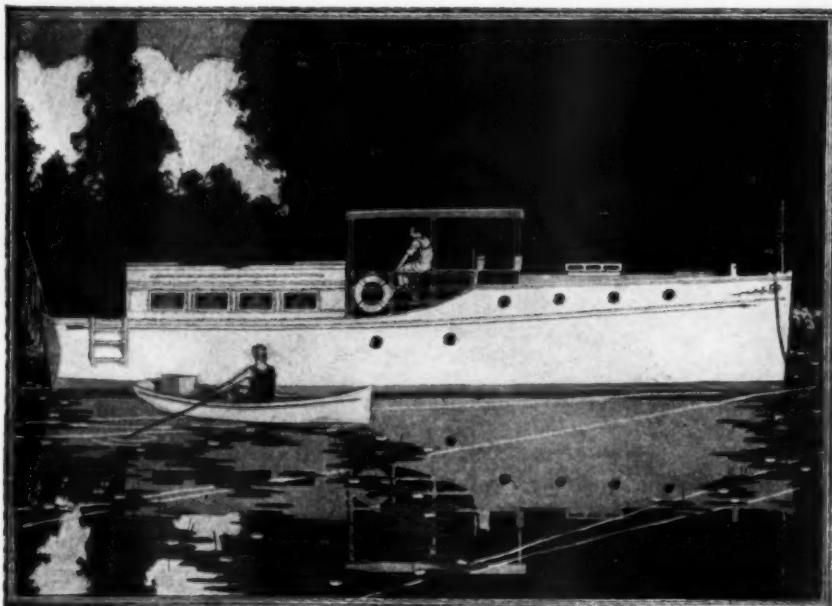
*Write today for catalog and prices*

**DISAPPEARING PROPELLER BOAT COMPANY**

**4851 Woodward Avenue, Detroit, Michigan**

North Tonawanda, N. Y.

92 King Street, W. Toronto, Canada



## *“A 50-foot Ship”—36 feet long*

When clocks were the only time pieces, folks said they could never be reduced to pocket size and be accurate. Yachtsmen, similarly, long doubted that 50-foot quality, efficiency, seaworthiness and beauty—could ever be put in a 36-foot ship.

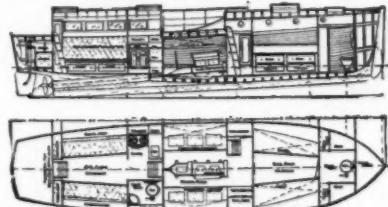
But today we have watches—and Burger cruisers.

In fact Burger 36-foot cruisers—Mower-designed and Burger-built—go beyond imitation of their bigger predecessors. Like watches, they have accomplished a certain refinement of appearance, nicety of design and detail, balance of power and grace—that makes the bulkier model seem garish and clumsy by comparison.

Every convenience, every luxury, every merit of a 50-foot cruiser—at a 36-foot standardized cruiser price. Write for our new illustrated catalog, describing this cruiser in every detail.

**BURGER BOAT COMPANY, MANITOWOC, WISCONSIN**

*The Burger 26-foot Run-about is about the classiest small boat ever launched. Complete details will be furnished upon request.*



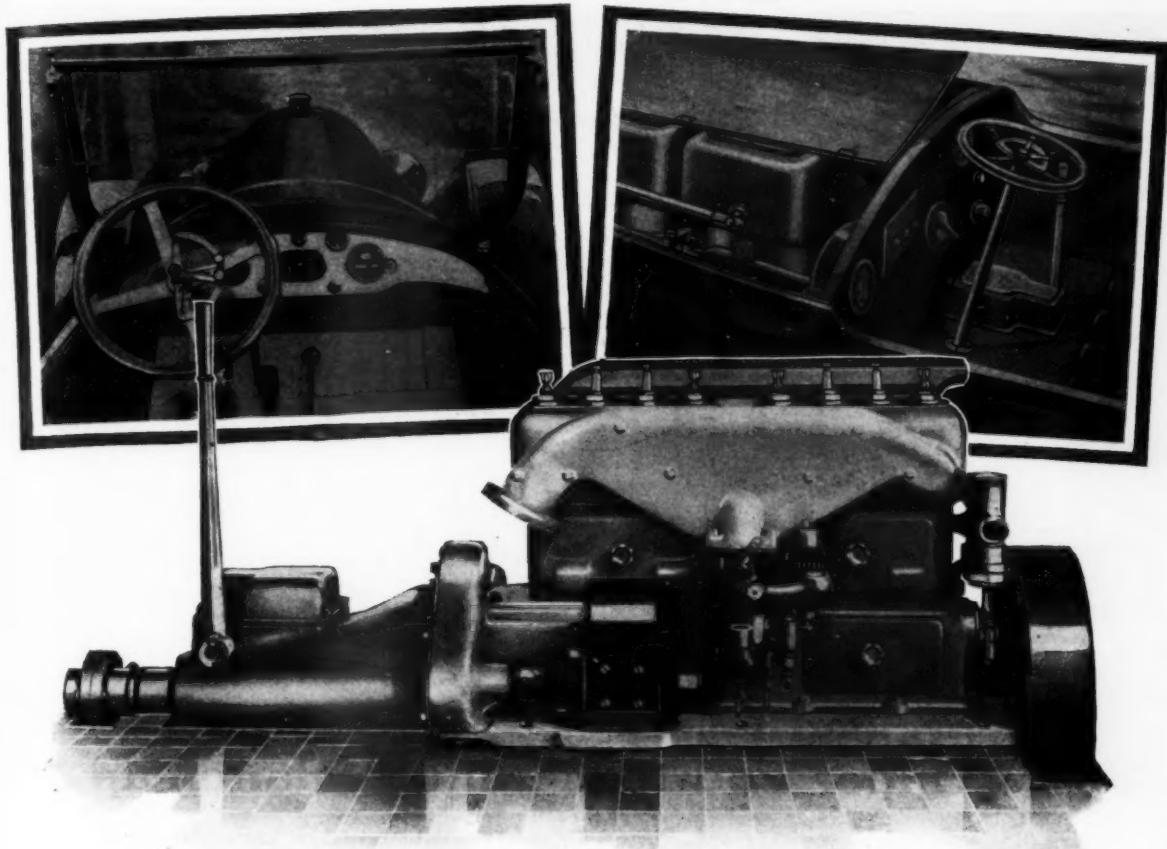
*A large bridge deck where all may gather; all controls on bridge deck. Two light and airy cabins with full head room—two toilets. Engine room well ventilated, power plant completely accessible, full head room at forward end. Fully equipped galley. Power plant a Scripps Model D four-cylinder, four-cycle motor; 35 H. P. electric starting and lighting system.*

*Speed 11 miles per hour. Marine plumbing, fittings and furnishings of the highest grade. The price, \$4,950, includes complete cruising equipment. Throughout, the boat is superior in every manner to any cruiser of similar character at its price. Thoroughly, substantially and KNOWINGLY constructed. A cruiser of long life, beautiful appearance, comfortable accommodations and highly satisfactory performance.*

# BURGER

BOATS BEAUTIFUL

*Advertising Index will be found on page 130*



## Drive your boat as you do your car

YOU can have the same ease and convenience, the same lack of engine anxiety when driving your boat as when you drive your car.

Install a Caille Aristocrat with automobile control. No cranking, no priming, no fussing. All controls and gauges on instrument board—electrically started, throttle controlled. Install the Aristocrat motor under a hatch and then forget about it except for giving it gasoline and oil.

The Aristocrat is the finest engine of its size in the world; a 4-cycle, 4-cylinder, 14-H.P.

model, completely enclosed so it is clean and quiet when running. Equipment of the highest reputation including Bosch magneto, Schebler carburetor, Northeast starter and generator, Willard storage battery, Caille positive action reverse gear.

The Aristocrat is select installation in launches, runabouts or light cruisers from 20 to 35 ft. in length. Insist that your boat builder install the Caille Aristocrat.

Of course, you'll want full particulars. Ask us or the nearest distributor.

CAILLE PERFECTION MOTOR COMPANY, 43 Caille Building, Detroit, Mich.

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T. T. BURCHFIELD CO.  
604 Arch St., Philadelphia

TOLEDO SALES & ENGINE CO.  
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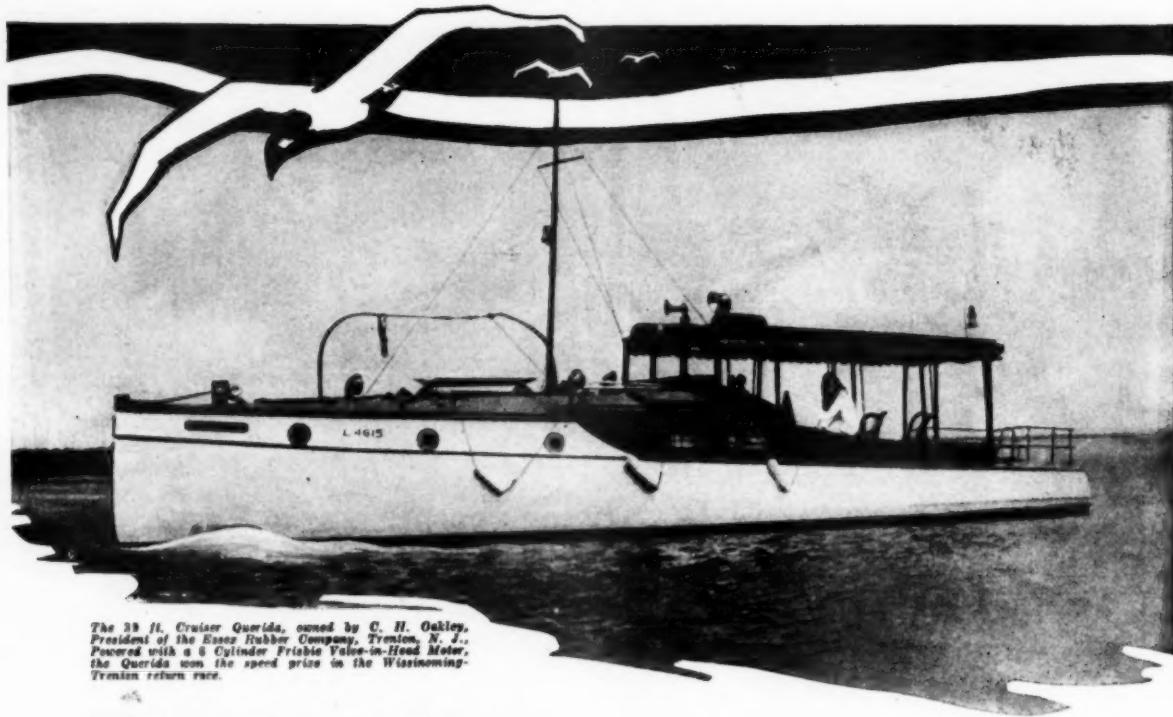
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# CAILLE

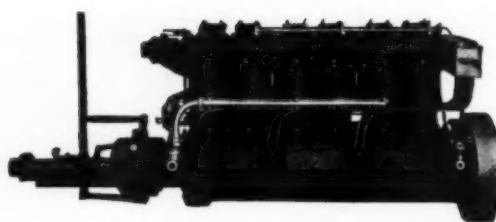
## Aristocrat Motor

*When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating, 119 West 40th Street, New York*



The 33 ft. Cruiser Querida, owned by C. H. Oakley, President of the Essex Rubber Company, Trenton, N. J., Powered with a 6 Cylinder Frisbie Valve-in-Head Motor, the Querida won the speed prize in the Wissinoming-Trenton return race.

## Wins Speed Prize Under Fourteen-Minute Handicap



"I am pleased to state that I have just received advice that my boat was awarded the speed prize in the Wissinoming-Trenton and return race; that is, we made the fastest time of the three cruisers which entered this particular class, although one of the entrants was rated higher than we were, and it was also an additional satisfaction to me that we were able to win this speed prize in spite of the fact that we lost fourteen minutes in getting away through a misunderstanding, so that in reality, our actual elapsed time was four hours, fifty-seven minutes and forty seconds for the forty-five nautical miles."

This is one more instance of the abundance of driving power developed by Frisbie Valve-in-Head Motors. Sizes 1 to 6 cylinders, all four cycle; 5 to 75 H.P.

Complete catalog and name of nearest dealer gladly sent on request.

**Frisbie Motor Company**  
7 College Street  
MIDDLETOWN, CONN.



**Frisbie an' I**



# CRANE

## Plumbing Equipment For Motor Boats

is so varied in pattern and design as to permit of adequate expression of individual taste, and includes many sizes that can be admirably arranged in the limited areas usually available in motor boats.

Careful selection of high-grade materials combined with modern scientific methods of construction, make Crane Sanitation Fixtures obviously a product of first quality.

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CRANE MONTREAL, TORONTO, VANCOUVER, WINNIPEG, LONDON, ENG.  
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We are manufacturers of about 20,000 articles, including valves, pipe fittings and steam specialties, made of brass, iron, ferrosteel, cast steel and forged steel, in all sizes, for all pressures and all purposes, and are distributors of pipe, heating and plumbing materials.

## THE JOHNSON MARINE REVERSE GEAR

# A Reverse Gear Should TRANSMIT Power— Not CONSUME It.

### How Much of Your Power is Lost In The Gear?

Here's a practical line of reasoning. You pay for every ounce of power your motor develops. You are bound to lose some of it, but the chances are you are losing too much. Do you know what a difference the reverse gear makes—how much your gear *consumes*, and how much it *transmits*?

And here's another point. The power your gear consumes is not just lost—it's taken out of the gear in wear. Slipping clutches, grinding gears, and poor bearings use up power, and power so used wears out the gear itself. You pay for lost power twice.

You Not Only Pay for Lost Power, But  
You Pay for It Twice.

### Johnson Ball Bearing Gears Save Power

Powerful clutches that carry their full load without slipping. Small, light-weight working parts of hardened nickel steel,—accurately made and assembled, and firmly supported,—eliminate grinding, cramping and binding. Completely enclosed to hold oil and give perfect lubrication. Mounted on ball bearings. Johnson Gears turn freely and smoothly with a minimum consumption of power.

### And the Gear That Turns Easiest Wears Longest



Take hold of the shaft of a Johnson  
Gear and *feel* the difference.

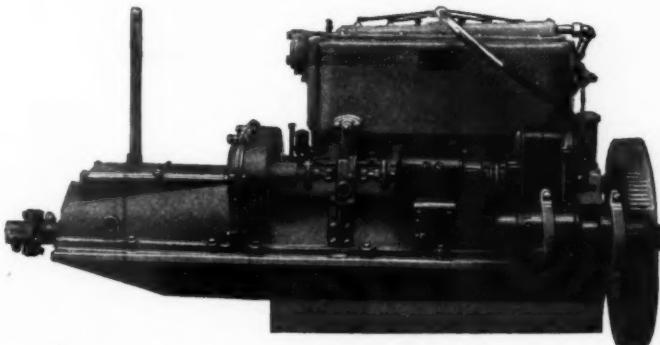
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complete catalog

THE CARLYLE JOHNSON MACHINE CO. MANCHESTER, CONN.

# THEY DO WELL EVERYWHERE



28 Ft. V-Bottom Runabout equipped with Model LN-42 Fay & Bowen engine, owned by Mr. D. Hulsinga, of Yselmonde, Holland



Fay & Bowen Model LN-42 four-cylinder  $4\frac{1}{4} \times 5\frac{1}{2}$  with electric starter

## Fay & Bowen Engine Company

104 Lake Street

GENEVA, N. Y.

U. S. A.

NEW YORK: 44 Third Ave., at 10th St., Sutter Bros., Representatives.

PHILADELPHIA: 116 Walnut St., Marine Equipment & Supply Co., Representatives.

BOSTON: 84 Atlantic Ave., Gray-Aldrich Co., Representatives.

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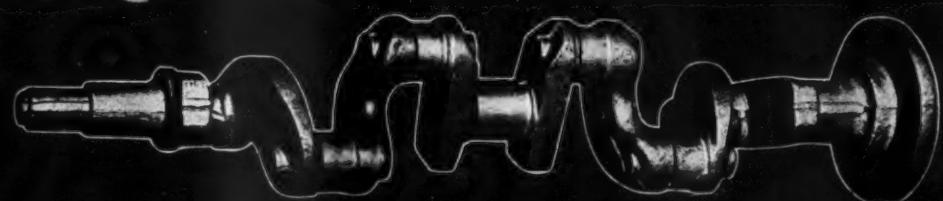
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# GUARANTEED FORGINGS



The Backbone of the Finest Automotive Engines



**WYMAN — GORDON**  
*The CRANKSHAFT MAKERS*  
 WORCESTER, MASS. CLEVELAND, OHIO.  
 CHICAGO, ILL.

## CUMMINS OIL ENGINES

Single Cylinder 7-8 H.P.

Hvid Type

Double Cylinder 14-16 H.P.

### Burn Any Free-Flowing Low Grade Fuel

At last you can get the economy, simplicity and reliability of the big Diesels in an engine suitable for smaller workboats, cruisers and auxiliaries.

Cummins Oil Engines operate on kerosene, distillate and most grades of crude oil. They are far more simple and reliable than a gasoline engine and they cost only 1/6th to 1/10th as much for fuel.

Utmost simplicity is secured by doing away entirely with carburetor, mixing valve and all electrical devices—no magneto, battery, coil, wires, plugs, etc. Ignition is solely by the heat of compression, so that hot heads, torches, starting plugs, etc., are unnecessary.

Cummins Engines can be started cold in any weather—started instantly without priming. They will operate perfectly under a continual downpour of water. Carbon troubles are unknown because every particle of fuel is completely consumed. Lubrication is so perfect that wear is practically impossible.

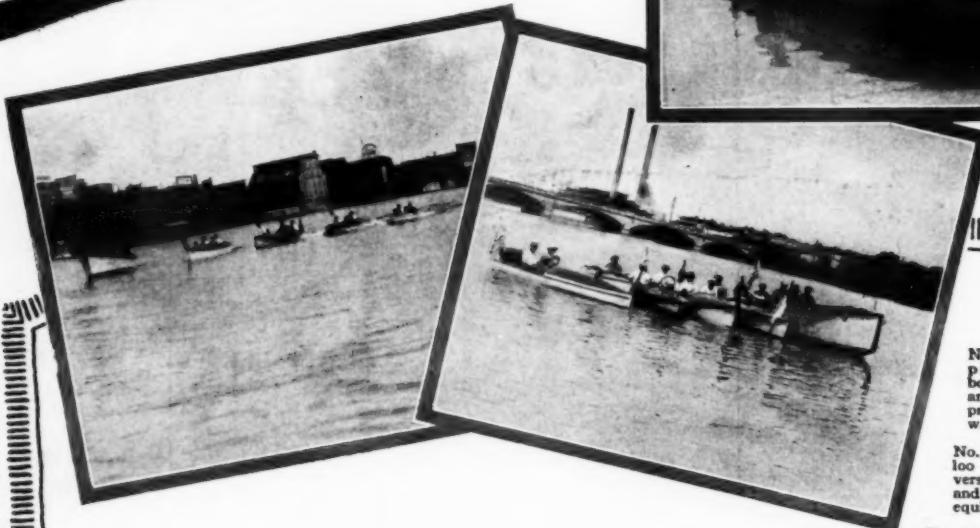
Cummins Oil Engines are now in production and are demonstrating daily their wonderful economy and reliability. Immediate deliveries on single and double cylinder sizes, 5" bore x 7½" stroke.

**Write today for prices**

*We have an excellent proposition for the right kind of dealers. Valuable territory still open.*

**CUMMINS ENGINE COMPANY**  
 Columbus, Indiana

# Universal



No. 1 shows the prize-winning boat "Atta-Boy" and owners with prize cups on forward deck.

No. 2 The Waterloo bunch of Universal enthusiasts and their Universal equipped launches.

No. 3 shows the same crowd all lined up for the race.

## 4 Cylinder Marine Motors

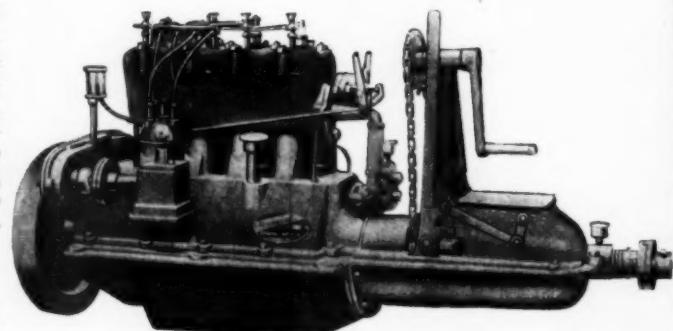
gain daily in popularity wherever introduced. The pictures above plainly show that one satisfaction giving Universal soon breeds whole crowds of Universal enthusiasts. Its success and popularity is due to the excellence of its performance under all conditions, its high grade material and workmanship, its fool-proof construction and the fact that it operates equally well under all conditions. Bulletin No. 29 chuck full of interesting motorboat data will be mailed free on request. Send for it today.

### 4 K.W. Generating Sets

built on the same sturdy, economical and dependable principle as the marine motors, are the ideal lighting equipment for Summer Colonies, Small Towns, Chautauquas, Theatres, Schools, Churches, Farms, or for contractor's use. Made in both stationary types, and on trucks for use where frequent moving is desirable.

#### Free Bulletins

on either the Generating sets, No. 30, or on Marine Motors, No. 29, will be mailed free on request. Send for the one in which you are interested, today.



**Universal Motor Co.,**

**Oshkosh, Wis.**

*Not connected with any other company using the name "Universal."*

